

SUPPLEMENT.

The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

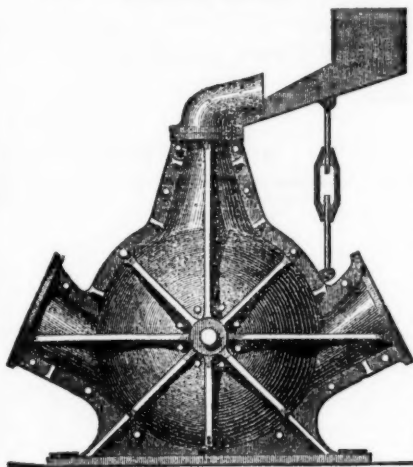
No. 2414.—VOL. LI.

LONDON, SATURDAY, NOVEMBER 26, 1881.

PRICE (WITH THE JOURNAL) SIXPENCE
PER ANNUM, BY POST, £1 4s.



JORDAN'S PATENT
PULVERISING MACHINE,
FOR REDUCING
MINERALS, CHEMICALS, CEMENTS, CEREALS, &c.
T. B. JORDAN AND SON,
52, GRACECHURCH STREET, LONDON.

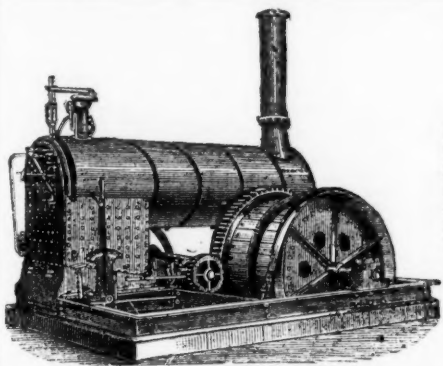


SIMPLE.
DURABLE.
EFFECTIVE
—
OTHER
SPECIALITIES.
GOLD
REDUCING PLANT.
HAND-POWER
ROCK DRILLS
GENERAL
MINING PLANT.
Illustrated Catalogues on application.

THE
BEST METAL FOR BUSHES,
BEARINGS,
SLIDE VALVES,
And other wearing parts of Machinery.
PUMPS, PLUNGERS,
CYLINDERS, &c.
SOLE
MANUFACTURERS
UNDER PATENTS.
THE
PHOSPHOR BRONZE
COMPANY, LIMITED,
SUMNER STREET, SOUTHWARK,
LONDON, S.E.

ELLIS LEVER AND CO.,
BRATTICE CLOTH MANUFACTURERS,
WEST GORTON WORKS,
MANCHESTER.

ESTABLISHED A QUARTER OF A CENTURY.



JOHN FOWLER AND CO.,

Steam Plough Works, Leeds; and 71, Cornhill, London, E.C.

MANUFACTURERS OF THE
PATENT YORKSHIRE "COMPOUND" SEMI-PORTABLES.
HORIZONTAL STATIONARY ENGINES.
HAULING AND WINDING ENGINES, all sizes.
LOCOMOTIVES, various gauges.
AIR-COMPRESSORS, VENTILATORS, &c.
CLIP PULLEYS; STEEL WIRE ROPES.
MULTITUBULAR AND MARINE BOILERS.

SYDNEY AWARDS, 1880.
THREE
FIRST SPECIAL PRIZES.

Catalogues, Specifications, or References to Parties using our Machinery can be had on application

IMPROVED PATENT
**INGERSOLL
ROCK DRILL**
MEDALS AND HIGHEST AWARDS.

American Institute, 1872.
American Institute, 1873.
London International Exhibition, 1874.
Manchester Scientific Society, 1875.
Leeds Exhibition, 1875.
Royal Cornwall Polytechnic, 1875.
Rio de Janeiro Exhibition, 1875.
Australia Brisbane Exhibition, 1876.
Philadelphia Exhibition, 1876.
Royal Cornwall Polytechnic, 1877.
Mining Institute of Cornwall, 1877.
Paris Exhibition, 1878.

LE GROS, MAYNE, LEAVER, & CO.,
60, Queen Victoria Street, London, E.C.,
SOLE AGENTS FOR THE
DUSSELDORF

WROUGHT IRON STEAM TUBE WORKS.

TUBES FOR BOILERS, PERKINS'S, and other HOT-WATER SYSTEMS.

For Catalogues of Rock Drills, Air Compressors, Steel or Iron Steam Tubes, Boiler Tubes, Perkins's Tubes, Pneumatic Tubes, Boring Tubes, and all kinds of Machinery and Mining Plant, apply—

60, QUEEN VICTORIA STREET, E.C.

NORMANDY ROCK DRILL.
NORMANDY AIR COMPRESSOR.

THESE PATENT MACHINES ARE VALVELESS.

RESULTS OF TRIALS at CARDIFF EXHIBITION, on a block of Cornish Granite, on 24th September, 1881:—

	Inches.	min. sec.
Normandy Rock Drill and Air Compressor, bored	1 1/4 x 10 1/2	in 2 10
Eclipse Rock Drill and Reliance Air Compressor	1 3/8 x 10 1/2	in 2 25
Beaumont Rock Drill and Sturgeon's Trunk Air Compressor	1 1/2 x 7 1/2	in 2 30

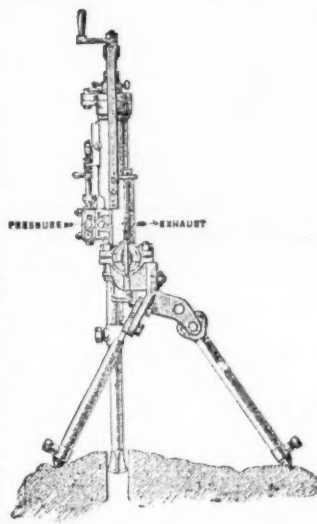
Normandy's have WON TWO GOLD MEDALS at the Melbourne Exhibition, 1880, and being the simplest, ARE MUCH THE CHEAPEST in first cost and in repairs.

A. NORMANDY, STILWELL, & CO.,
OPPOSITE CUSTOM HOUSE STATION,
VICTORIA DOCKS, LONDON, E.
STEEL CASTINGS.

THE BOWLING IRON COMPANY (LIMITED), BRADFORD, have made considerable additions to their STEEL WORKS, and are now in a position to EXECUTE ORDERS for STEEL CASTINGS of almost any pattern and size.

"Cranston" Rock Drill.

IS DRIVING LEVELS OVER 200 LINEAR FEET PER MONTH, IN HARD QUARTZ ROCK. IS EMPLOYED AT THE "EIDERHARDT" SILVER MINES (NEVADA), THE "ST. JOHN DEL REY GOLD MINES" (BRAZIL); BELGIUM, SWEDEN, FRANCE, INDIA, and other Countries.



"CRANSTON'S" DEEP BORING MACHINERY AND TOOLS FOR ARTESIAN WELLS, AND PROSPECTING FOR MINERALS TO ANY DEPTH, AIR-COMPRESSORS, TURBINES, AND ALL OTHER MINING MACHINERY.

For other particulars and prices, apply to—

J. G. CRANSTON,
22, Grey-street, Newcastle-on-Tyne.

The Barrow Rock Drill
COMPANY

SUPPLY their CELEBRATED ROCK DRILLS, AIR COMPRESSORS, &c., and all NECESSARY APPLIANCES for working the said Drills.

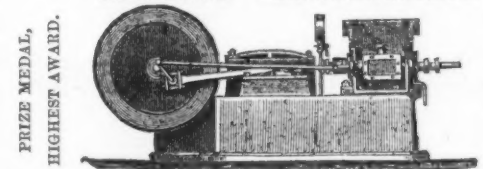
Their DRILLS have most satisfactorily stood the TEST of LONG and CONTINUOUS WORK in the HARDEST KNOWN ROCK in numerous mines in Great Britain and other countries, clearly proving their DURABILITY and POWER.

The DRILLS are exceedingly STRONG, LIGHT, SIMPLE, and adapted for ends, stopes, quarries, and the sinking of shafts. They can be worked by any miner.

For PRICES, Particulars and Reports of Successful and Economical Working, apply to—

LOAM AND SON,
LISKEARD, CORNWALL.

THE PATENT
"ECLIPSE" ROCK-DRILL
AND
"RELIANCE" AIR-COMPRESSOR



ARE NOW SUPPLIED TO THE
ENGLISH, FOREIGN, AND COLONIAL GOVERNMENTS

And are also in use in a number of the
LARGEST MINES, RAILWAYS, QUARRIES, AND HARBOUR
WORKS IN GREAT BRITAIN AND ABROAD

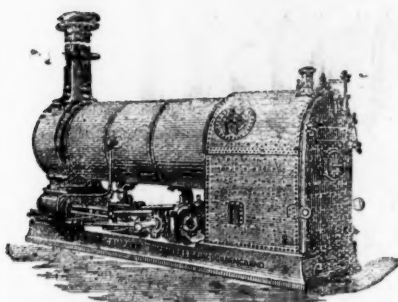
FOR ILLUSTRATED CATALOGUE AND PRICES apply to—
HATHORN & CO., 22, Charing Cross, London, S.W.

HIGHEST AWARD MELBOURNE EXHIBITION, 1881. ROBEY & CO., ENGINEERS, LINCOLN.

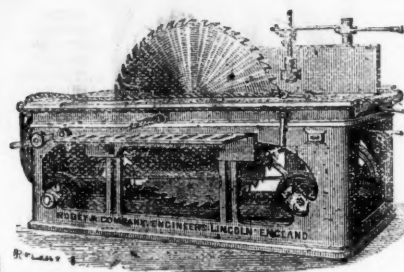
NOTICE.

TO COLLIERY PROPRIETORS, MINE OWNERS, &c.

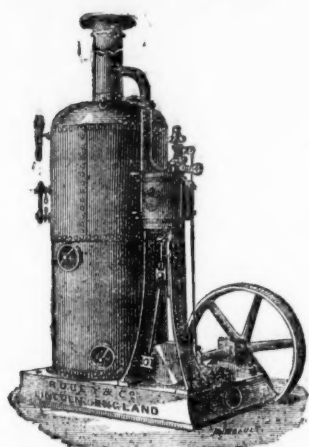
The Patent "Robey" Mining Engine



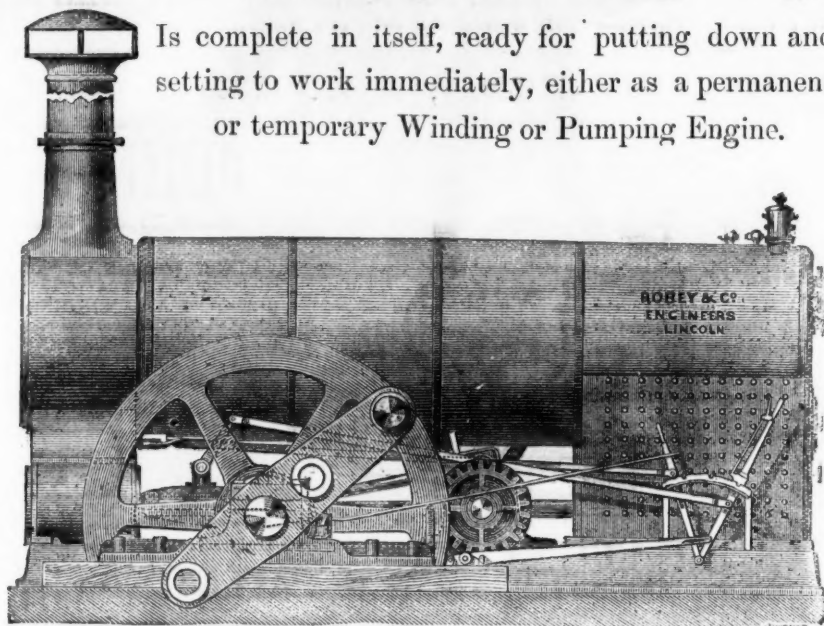
THE PATENT ROBEY FIXED ENGINE AND LOCOMOTIVE BOILER COMBINED
4 to 50-horse power.



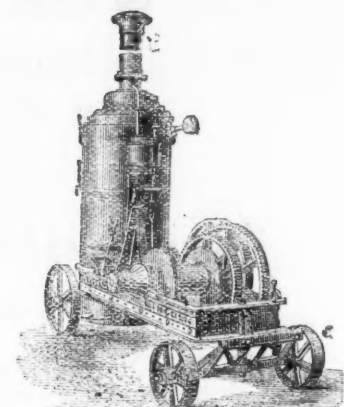
SELF-ACTING CIRCULAR SAW BENCH.



VERTICAL STATIONARY STEAM ENGINE AND PATENT BOILER COMBINED,
1½ to 18 horse power.



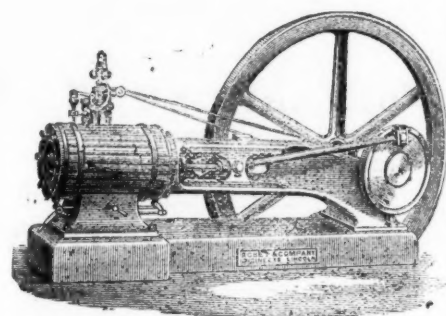
Is complete in itself, ready for putting down and setting to work immediately, either as a permanent or temporary Winding or Pumping Engine.



ROBEY & CO LINCOLN ENGLAND.
IMPROVED HARROW LIFT, or VERTICAL HOISTING ENGINE.



SUPERIOR PORTABLE ENGINES,
4 to 50-horse power.



HORIZONTAL FIXED ENGINES,
4 to 60-horse power.

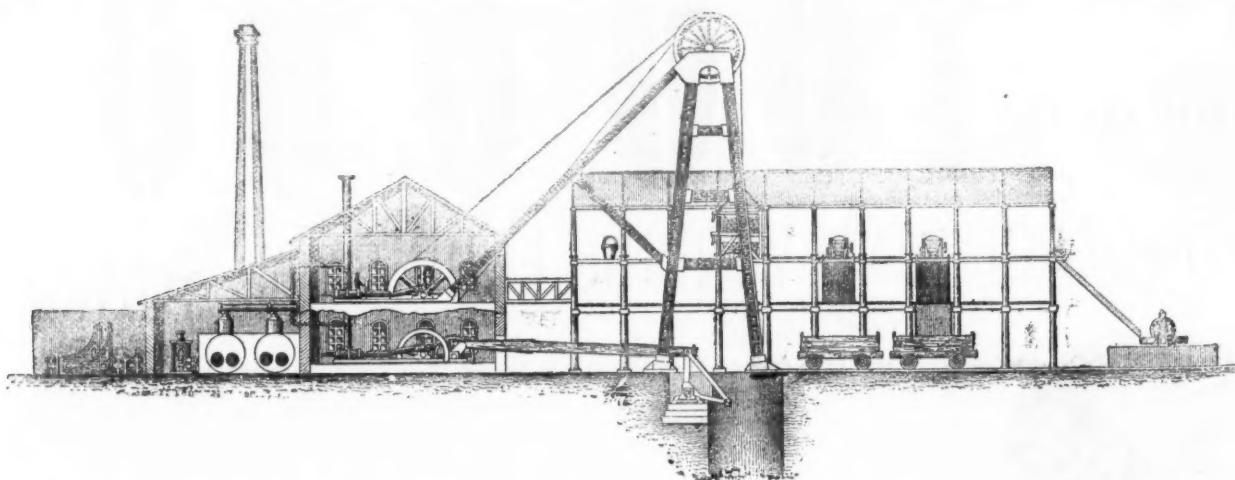
ALL SIZES KEPT IN STOCK, FROM 6 TO 50-H.P. NOMINAL.

For particulars and prices, apply to the

PATENTEES AND SOLE MANUFACTURERS,

ROBEY & CO., ENGINEERS, LINCOLN.

ROBEY & Co. will exhibit at Stand No. 1 at the Smithfield Show to be held Dec. 5th to the 9th, superior specimens of the above machinery.



YEADON AND CO., LEEDS, ENGLAND,

Engineers and Contractors for every description of Plant for Collieries, Mines, and Brickworks.

COLLIERIES.

WINDING, HAULING, AND PUMPING ENGINES; AIR COMPRESSORS; DIRECT-ACTING STEAM PUMPS; VENTILATING FANS; SEMI-PORTABLE BOILERS AND ENGINES COMBINED; PIT-HEAD PULLEYS; WIRE ROPES; WROUGHT-IRON HEAD GEAR, CAGES, and SCREENS; BOILERS; PATENT DETACHING HOOKS; COAL WASHING MACHINES; STEAM HAMMERS; STEAM CAPSTANS; PUMPS; VALVES.
PATENT BRIQUETTE MACHINES (for Compressed Fuel).

MINES

CORNISH CRUSHERS and STAMPING MILLS; WATER WHEELS; REVOLVING and OTHER SCREENS; BLAKE'S ORE CRUSHERS; JIGGERS BUDDLES; ORE-WASHING MACHINES; GRINDING and AMALGAMATING PANS; WELL-BORING MACHINERY; WIRE TRAMWAYS.

BRICKWORKS.

PATENT BRICK MACHINES for DRY, SEMI-DRY, and PLASTIC CLAY; WET and PERFORATED CLAY GRINDING PANS; CLAY ROLLS PUG MILLS; MORTAR MILLS; FRICTION HOISTS; PIPE-MAKING MACHINES; BRICK PRESSES; PATENT KILNS.

PLANS, SPECIFICATIONS, AND ESTIMATES FOR COMPLETE PLANTS ON APPLICATION.

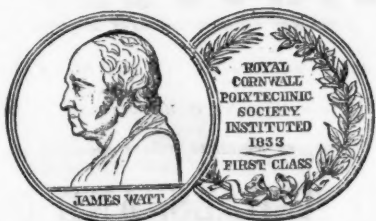
BEST DESIGNS, WORKMANSHIP, and MATERIAL THROUGHOUT.

N.B.—Experienced workmen sent out, if required, to Erect or Manage. Considerable Saving in Prices by dealing direct with us, having for many years been chiefly engaged in the manufacture of Colliery, Mining, and Brickmaking Plants.

SANDYCROFT FOUNDRY AND ENGINE-WORKS CO. (LIMITED), CHESTER.

SPECIALITY MINING MACHINERY.

ESTABLISHED 1838.



PUMPING & WINDING ENGINES.

AIR COMPRESSORS AND ROCK DRILLS.

PITWORK.

Crushing Mills & Stone Breakers.

DRESSING MACHINERY.

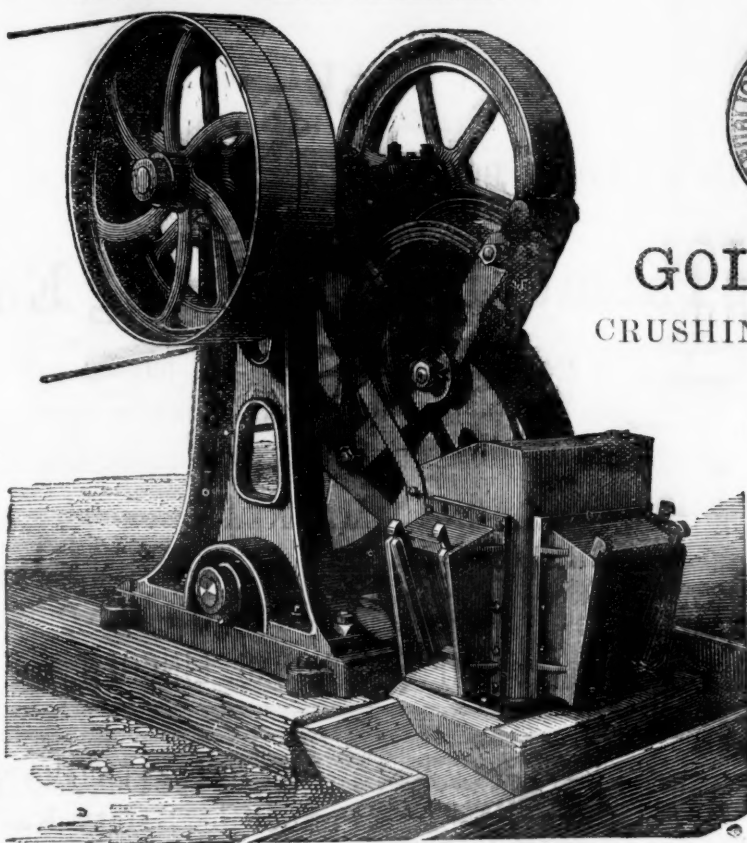
BOILERS.

WATER-WHEELS.

FORGINGS.

MINING TOOLS.

AND STORES OF ALL KINDS.



GOLD & SILVER

CRUSHING AND AMALGAMATING MACHINERY.

Californian or Gravitation

STAMPS

OF ANY SIZE OR PATTERN

PANS.

Concentrators & Separators.

BUDDLES.

RETORTS.

SIEVING & BLANKETS.

Amalgamated Copper Plates

PATTERSON'S PATENT ELEPHANT ORE STAMPS.

IN USE IN CORNWALL, CALIFORNIA, BRAZIL, AUSTRALIA, AFRICA, AND INDIA. THE BEST MACHINE FOR PULVERISING

GOLD QUARTZ,

And other hard and refractory Materials. Particularly designed and adapted for transmission Abroad, and for Countries where Transport is a difficulty. Quickly and economically erected. Can be seen stamping Quartz near London.

LONDON OFFICE: 6, QUEEN STREET PLACE, E.C.

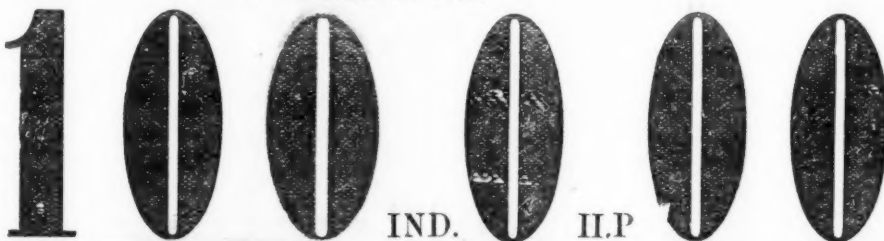
TWO GOLD MEDALS.

FOX'S PATENT

PARIS, 1878

CORRUGATED FURNACE FLUES,

NOW APPLIED TO OVER



SOLE MAKERS—

The LEEDS FORGE CO., Ltd.

Leeds, Yorkshire.



PRICE LISTS AND PARTICULARS ON APPLICATION.

STEVENS' PATENT UNDERGROUND WINDING ENGINE,

DESIGNED FOR USING COMPRESSED AIR OR STEAM.

SIMPLE, COMPACT, PORTABLE.

Silver Medal, Royal Cornwall Polytechnic Society, 1876.

No. 1 size, 7 in. single cylinder, with 2 ft. drums.
No. 2 size, 9 in. single cylinder, 2 ft. 6 in. drums.
A,— 6 in. double cylinder, with 2 ft. 3 in drums.
B,— 8 in. " " 3 ft. 0 in drums.
C,— 10 in. " " 3 ft. 6 in drums.
D,— 12 in. " " 4 ft. 6 in drums.
E,— 14 in. " " 5 ft. 0 in. drums.

MANUFACTURED BY

THE USKSID CO.,

ENGINEERS, MAKERS OF PUMPING AND WINDING MACHINERY, AND FORGINGS OF EVERY DESCRIPTION.

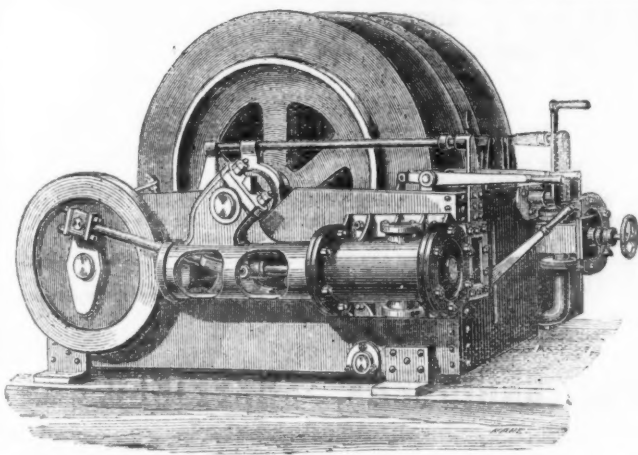
NEWPORT, MON.

Agents for the six Northern Counties—

TANGYE BROTHERS, ST. NICHOLAS BUILDINGS,

NEWCASTLE-ON-TYNE.

[This Advertisement appears fortnightly.]



GOLD MEDAL AWARDED, PARIS EXHIBITION 1878.

THOMAS TURTON AND SONS,

MANUFACTURERS OF

MINING STEEL of every description.

CAST STEEL FOR TOOLS. CHISEL. SHEAR. BLISTER. & SPRING STEEL

MINING TOOLS & FILES of superior quality.

EDGE TOOLS, HAMMERS, PICKS, and all kinds of TOOLS for RAILWAYS, ENGINEERS, CONTRACTORS, and PLATELAYERS. LOCOMOTIVE ENGINE, RAILWAY CARRIAGE and WAGON SPRINGS and BUFFERS.

SHEAF WORKS & SPRING WORKS, SHEFFIELD.

LONDON OFFICES—90, CANNON STREET, E.C.

PARIS DEPOT—12, RUE DES ARCHIVES.

BOSTON MASS., U.S.—40, KILBY STREET.

SOLID DRAWN BRASS AND COPPER BOILER TUBES,

FOR LOCOMOTIVE OR MARINE BOILERS, EITHER

MUNTZ'S OR GREEN'S PROCESS.

MUNTZ'S METAL COMPANY (LIMITED),

FRENCH WALLS,

NEAR BIRMINGHAM.



By a special method of preparation this leather is made solid, perfectly close in texture and impermeable to water; it has, therefore, all the qualifications essential for pump buckets, and is the most durable material of which they can be made. It may be had of all dealers in leather, and of—

HEPBURN AND GALE,

TANNERS AND CURRIERS,

LEATHER MILL BAND AND HOSE PIPE MANUFACTURERS

LONG LANE, SOUTHWARK LONDON

Prize Medals, 1851, 1855, 1878, for

MILL BANDS, HOSE, AND LEATHER FOR MACHINERY PURPOSES.

AMERICAN MINES.—An accurate and comprehensive record of the Gold and Silver Mining Industry of the United States may be found every week in

"THE MINING REVIEW,"

Published every Saturday, at Chicago, U.S.A. Subscription price, including postage, 16s. per annum.

Address, "The Mining Review Company," 118, Monroe-street, Chicago.

DIE EPOCHE: ORGAN FOR POLITICS, COMMERCE INDUSTRY, FINANCE, SCIENCE, AND LITERATURE, is published in German every Tuesday, Thursday, and Saturday, at Passage roman, Rondeau, Bucharest, at 16s. per annum, exclusive of postage (about 6s. 6d.), and may be obtained to order through any foreign newsagent in London; or by remitting 3s. direct to the Publisher, as above.

ROOT PATENT TUBULOUS STEAM BOILER
SAFE, ECONOMICAL, EASY TRANSPORT IN MOUNTAINOUS COUNTRIES.

KNAPS PATENT MECHANICAL STOKERS,
APPLICABLE TO ALL KIND OF BOILERS & FURNACES.—ECONOMICAL AND SMOKE CONSUMING.

THE PATENT STEAM BOILER COMPANY.
HENEAGE STREET, BIRMINGHAM.

JOSEPH FIRTH AND SONS' New Patent Brick-making Machine,

Embraces the following advantages—viz.:
Implicitly, strength, and durability. Compactness and excellence of mechanical arrangements, large producing capabilities, moderate cost.
It makes two bricks at once, and will make 2,000 to 14,000 plastic pressed bricks per day, hard enough to go direct to the kiln without drying; or it will make the bricks thoroughly plastic if required. For works requiring a machine at less cost the machine is made to turn out one brick at once, and is capable of producing 8000 bricks per day.
The Machine can be seen at work daily at the Brickworks of the Patentees, JOSEPH FIRTH AND SONS, WEBSTER HILL, DEWSBURY, and CROWBURY BRICK WORKS, SUSSEX; as also their Patent Gas Kiln for Burning Bricks, which possesses the following amongst other advantages, viz.:—Economy in Fuel, Rapidity and Quality of Work, even Distribution of Heat, and Total Consumption of Smoke.

PATENT DUPLEX LAMPS,
FOR COLLIERIES, IRONWORKS, &c.,
SUITABLE FOR

Pit Banks, Engine-Houses, &c., &c.



Each Lamp gives a light equal to 26 candles,
No breakage of Chimneys from Heat.

S. HOOPER,
CLOSE TO NEW STREET STATION,
Lower Temple Street, BIRMINGHAM.

Illustrations on application.

INCREASED VALUE OF WATER-POWER.

MacADAM'S VARIABLE TURBINE.

This Wheel (which is now largely in use in England, Scotland, and Ireland) is the only one yet invented which gives proportionate power from both large and small quantities of water. It can be made for using a large winter supply, and yet work with equal efficiency through all variations of quantity down to a fifth, or even less if required. It is easily coupled to a steam-engine, and in this way always assists it by whatever amount of power the water is capable of giving, and therefore saves so much fuel.
This Turbine is applicable to all heights of fall. It works immersed in the tail-water, so that no part of the fall is lost, and the motion of the Wheel is not affected by floods or back-water.

References to places where it is at work will be given on application to—
MacADAM BROTHERS AND CO., BELFAST.

Just published.
COAL MINING PLANT.
By J. POVEY-HARPER, of Derby.

Comprising Working Drawings 2 ft. by 1 ft. 8 in., taken from actual practice, illustrative of Colliery Plant and the Working of Coal, &c.

Price bound, or loose sheets in portfolio, £2 5s.;
Or with the Designs for Workmen's Houses, £2 12s. 6d.

"A carefully and thoughtfully executed series of working drawings of coal mining plant. The work is of the utmost possible utility to students and mine managers, and for those undertaking to open out new collieries, whether in this country or abroad, no more complete guide could be desired."—*Mining Journal*.

"This is a very fine work, excellently got up, and well adapted for the purpose indicated. We strongly recommend the work on account of its extremely practical character to every colliery proprietor who may contemplate new erections or appliances in coal working, or who may be opening out new mineral property."—*Colliery Guardian*.

"We have no hesitation in saying that a more useful work of its kind has never come under our notice. Every detail and measurement are given, and we may fairly say that such an elaborate and useful work has not been issued in recent years, if at all."—*Coal and Iron Trades' Review*.

London: Published at the MINING JOURNAL Office, No. 25, Fleet-street, E.C. Copies may be obtained by order of any bookseller, who can obtain them through their London agent.

TO PARENTS AND GUARDIANS.

AN ELIGIBLE OPPORTUNITY is now offered for the SETTLEMENT of an ACTIVE YOUNG GENTLEMAN IN CANADA. He will be enabled to obtain his profession as a Solicitor in five, or if he be a Graduate in three years. Cost of living about £150. In the meantime he will have active work, and obtain a knowledge of the Dominion, which is destined to become one of the most prosperous of the Colonies. Premium, £100 sterling.

HERBERT C. JONES,
32, Wellington-street, Toronto. Canada Land and Loan Agency.

CALIFORNIAN AND EUROPEAN AGENCY.
509, MONTGOMERY STREET, SAN FRANCISCO, CAL.
J. JACKSON, Manager

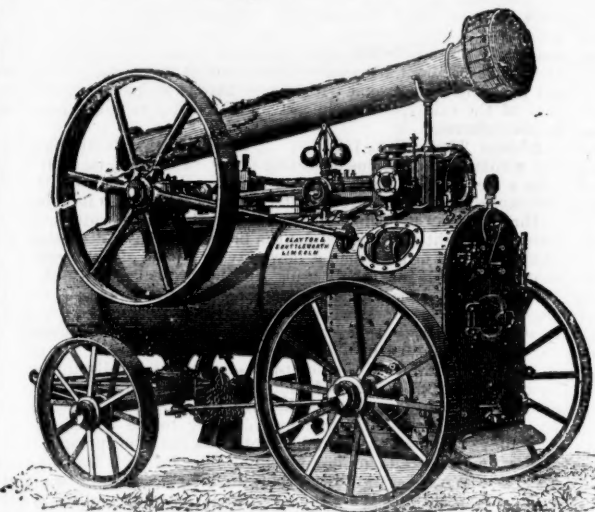
WHAT IS YOUR DISEASE—WHAT IS YOUR REMEDY?

GRATIS, free by post on receipt of Two Stamps to pay Postage.
THE BOOK OF POSITIVE REMEDIES.
It is the Book of Positive Medicine for the Cure of certain forms of Debility and Nervousness—viz: Mental and Physical Depression, Palpitation of the Heart, Noises in the Head and Ears, Impaired Sight and Memory, Indigestion, Pains in the Back, Headache, Piles, Constipation, Hysteria, Dizziness, Local Weakness, Muscular Relaxation, Nervous Irritability, Blushing, &c., resulting from Exhaustion of Nerve power, effect of Overwork, City Life, Worry, Brain Tension, Intemperance, and other abuses of the system.
H. and H. SMITH and Co., Positive Remedy Laboratory, 26, Southampton-row London, W.C.

1880-81.—MELBOURNE (AUSTRALIA) EXHIBITION.

Portable Engine—Gold Medal.

Thrashing Machine—Gold Medal.



The Royal Agricultural Society of England have awarded Every First Prize to CLAYTON and SHUTTLEWORTH for Portable and other Steam Engines since 1863, and Prizes at every Meeting at which they have competed since 1849.

GOLD MEDALS, AND OTHER PRIZES,

Have been awarded to CLAYTON AND SHUTTLEWORTH at the various International Exhibitions of all Nations, including LONDON, 1851, 1862; PARIS, 1855, 1867, 1878; VIENNA, 1857, 1866, 1873;

for their

STEAM ENGINES, Portable and Fixed
(For Coals, Wood, Straw, and every description of Fuel.)

TRACTION ENGINES, &c.

Catalogues in English and in all Continental Languages free on application.

CLAYTON AND SHUTTLEWORTH,

STAMP END WORKS, LINCOLN, & 78, LOMBARD STREET, LONDON.

LONDON—1862.

ESTABLISHED 1848.

PARIS—1878.



W. BRUNTON AND CO.,
Penhellick Safety Fuse Works, Redruth,
AND
Cambrian Safety Fuse Works, Wrexham,



ALL KINDS OF SAFETY FUSE.

SILVER MEDAL (HIGHEST AWARD), MELBOURNE EXHIBITION, 1881, for

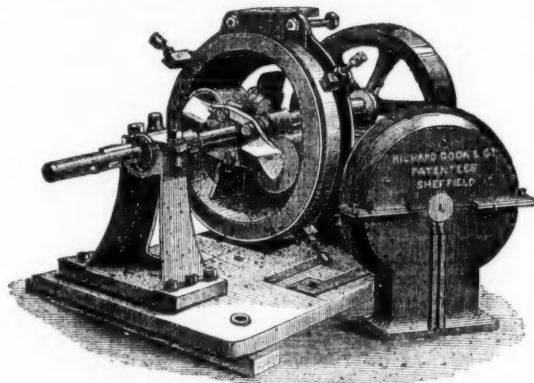
"EXCELLENCE OF MANUFACTURE."



LUCOPS'

Patent Centrifugal Pulveriser,

(Two tons per hour with 5 horse-power actual.)



For reducing to an impalpable powder, or to any requisite degree of fineness, all materials capable of being thus treated. CEMENT, CHEMICALS, GRAIN, COAL, COLOURS, PHOSPHATES, LIME, COPPER, TIN, ZINC, and other Ores with rapidity, completeness, and perfect uniformity.

THE ONLY GUARANTEED MACHINE FOR

GOLD QUARTZ.

This mill consists of a circular iron casing, the section being elliptical in form, and is fixed vertically on a firm bed or foundation plate, a shaft runs through the centre of the casing on which is keyed a series of arms, in the extremities of which revolve two or more slightly oblong iron rollers, which, when put in motion, fly off from the centre and run upon the interior periphery of the casing, and by centrifugal force crush and pulverise the article under treatment.

The effect produced by this system is most extraordinary in its practical results, the power required is small in consequence of the comparative absence of friction from the working parts of the mill, the combined results of the rolling action of the crushers and their impact by centrifugal force on the material, being the same in kind, but in degree far exceeding that of edge runners, the sides of the casing are formed as open wire sieves of the degree of fineness required, and a series of propelling blades attached to and revolving with the central shaft drive the material under treatment through the sieves as it is pulverised; by this arrangement the degree of fineness can with certainty be arrived at from coarse to extreme fine, and that with uniformity.

Intending purchasers can at all times satisfy themselves by sending the material they wish to operate on, and seeing it pulverised. Over 300 in use. Prices and testimonials free on application.

RICHARD COOK & CO., ENGINEERS, SHEFFIELD.

MANCHESTER WIRE WORKS.

NEAR VICTORIA STATION, MANCHESTER.

(ESTABLISHED 1790).

JOHN STANIAR AND CO.,

Manufacturers by STEAM POWER of all kinds of Wire Web, EXTRA TREBLE STRONG for

LEAD AND COPPER MINES.

Jigger Bottoms and Cylinder Covers woven ANY WIDTH, in Iron, Steel, Brass, or Copper

EXTRA STRONG PERFORATED ZINC AND COPPER RIDDLES AND SIEVES

Shipping Orders Executed with the Greatest Dispatch.

Original Correspondence.

THE COMING GOLD FIELDS—GOLD COAST COLONY.

SIR,—The Gold Coast colony is now receiving the just attention it deserves of the mining public as a gold producing country. It is to me somewhat singular that this colony has been so entirely neglected in respect to its mineral resources. Its reputation for the production of gold is from time immemorial; yet it is not to be wondered at that nothing has been done to develop the immense riches of this country, as the subject has never been brought under proper notice. With the exception of Mr. Peacock's communication to your valuable Journal in 1873 we have not been reminded of the wealth of West Africa during the past 23 years; at least not in the *Mining Journal*, for I have gone through my file of Journals extending over this time and find no mention of it; and I presume, Sir, that from a mining point of view had attention been drawn to the Gold Coast colony you would have been the first to notice it. This year, of course, things have altered, and valuable information may be gleaned from the pages of the Journal. It is, however, noticeable that, though information has been somewhat scanty the public have cheerfully come forward and supported the few companies which have been formed, but my impression is that we do not sufficiently appreciate the importance of prospecting and developing this district. Others are coming forward, for already French companies are making rapid strides, and ere long, unless we are diligent to observe our special privileges, we may lose by it. After carefully weighing all the information at my command I am fully convinced that the gold fields of West Africa will surpass all others. I lean most decidedly to the opinion entertained by not a few that the reputable land of Ophir is none other than the Gold Coast. The Ophir of Solomon remains an unsolved problem. We have had from time to time theories of all sorts, but none of them have indubitably settled this question. Some have affirmed that Ophir was in Eastern Africa or Southern Arabia; others the East Indies or Sumatra, and even the West Indies, Peru, and Australia. As regards India the President of the Geographical Society in 1868 said that India was out of the question, for there was no sea communication at the time of King Solomon with that country. Africa only really and truly answers the description. Ophir may have been a gold producing land or it may have been a seaport or station for the collection of produce, but it is pretty certain that the gold must have been procured at a very short distance from the sea. The Gold Coast has above all other places a prior claim to the Scriptural name of Ophir. The Gold Coast has for centuries had the tradition of being rich in gold. It is believed that a colony under Grecian leaders was established here 2900 years ago. As far back as the 14th century the Portuguese were in possession of this part of the coast, and Las Minas (Elmina) was built for the special protection of the miners and traders. An accident for want of sufficient care in timbering the mines worked near Elmina was the cause of the mines being closed in 1622, and have not since been worked. Old maps of this district, dating back nearly 200 years, are marked in various places "rich in gold." These were times when mining was carried on the world over on a system which could not be thought of to-day; and if the mines showed abundance of gold with the primitive appliances which must necessarily have been adopted they must have been rich indeed. I contend that no district in the world has held a reputation for the production of gold, and continued it unimpaired, as has the Gold Coast for so long a period. What greater proof of the quantity of gold could we have than the fact of its being found in the sands on the seashore; and such is the fact, confirmed by the testimony of so recent a visitor to the Gold Coast as Mr. Cornish. Mining operations are in their infancy, but the opinions of a few gentlemen who have been on the spot will show that the capacities for the production of gold are very great, and if this can be said when properties are undeveloped what may we not look for in the future? Mr. Harvey, late of Port Phillip, and now the resident engineer for the Indian Glenbrook, says:—"I venture to assert India will never be able to approach for wealth or yield a fraction of the value contained in the reefs and unexplored deposits of Africa. . . . Where 1 oz. of gold is obtained from East Indian mines 4 ozs. or 5 ozs. per ton will be got on the Gold Coast of West Africa." M. M. J. Bonnat, speaking of Akankoo, says, "I believe it to be the finest mining property in the world." Commander Cameron, the celebrated explorer, says that the people of the Gold Coast have lived from time immemorial by washing gold out of the sand. Gold can be washed out on the sea beach; he washed it out in the native villages. Mr. Cornish says other portions of this part of the country are known to be yet more auriferous than the portion at present being opened up. In the vicinity of the town of Axim itself (near the coast) eight men are residing, I am informed, who in the course of three months and with the most primitive appliances, obtained from a quartz reef 1200 ozs. of gold. Speaking of Akankoo, he says the lode is visible along the crown of the hill for some distance, and at the highest point shows a solid body of stone as an outcrop 20 to 30 ft. thick, reminding me very much of the Old Man reef at Clunes and the big reef at Mount Egremont, Victoria, as I saw them in 1855, and from all I can see and judge from the general features and nature of the country, I cannot see why the results to be obtained from the future working of this lode may not be equally satisfactory and profitable to the owners as those I have mentioned.

"A Valued Correspondent" of the R. G. S., writing to the *Mining Journal* in July last from the Gold Coast colony, says:—"I have become fully convinced, not only of the exceptional richness of the country, but of the certainty of the success of any company obtaining eligible concessions and working them in a proper manner. . . . Whilst many concessions of great value have already been obtained, it cannot be doubted that most of the richest spots have not yet been hit upon, even by the natives. These must be discovered in due time, and I feel confident that there is a great future in store for gold mining enterprises on the Gold Coast, and that the yield of the precious metal must, within a very few years, exceed the most sanguine expectations. The highly auriferous nature of the soil generally, as well as the vast number of quartz reefs running through the country, is something wonderful, and quite beyond the ideas I had formed before coming here. . . . Some rich lodes have recently been struck, and a few years will probably witness a vast development of the immense and hitherto neglected resources of this very rich country, which is unequalled in the whole world as to the quantity of gold which exists in its almost immeasurable and practically inexhaustible auriferous quartz reefs, as well as in its extensive alluvial deposits of the precious mineral."

J. A. Skertchley says:—"What becomes of the gold dust (raised by the natives) is more than I am able to say; but it is certain that the quantity which makes its way down to the European factories is no criterion of the quantity raised. A large percentage is buried in the floors of the huts of the miners, who like to accumulate the precious dust in this manner, though its acquisition is of no more real use to them than are the hoards of the miser. It is true they have but few wants to supply—gin, cloth, tobacco, and powder being the principal articles of purchase; but it is strange that after the severe toil of the mines they should be content to bury the gold in jars in the floors of the huts during their lifetime, while at the death of the owner the precious metal is interred with him. A 'resurrectionist' would be a lucrative profession in West Africa, for there are millions buried in the graves of the chiefs and principal men, who during their lives lived from hand to mouth in apparent penury." Captain R. F. Burton:—"It is becoming evident that Africa will some day equal half-a-dozen Californias. . . . Will our grandsons believe that in these days . . . that this Ophir—that this California, where every river is a Imolus and a Pactolus, every hillcock is a gold field, does not contain a cradle, a pudding machine, a quartz crusher, a pound of mercury?"

The Liverpool Post:—"It will be remembered what a vast impetus was given a generation ago to our expanding trade by the discovery of gold in San Francisco and Australia, and it may be safely asserted that to those discoveries the present generation owes very largely its comforts and its advancement in everything for which the reign of Her Majesty will be famous. Bearing these facts in mind, and looking at the present depressed condition of our commerce, and

remembering also the yearly decreasing supply of gold, we cannot but look upon these discoveries on Guinea Coast (whence the name of our well-known coin) as most providential. Mr. Paulus Dahse says—"The depth of the gold-bearing strata is not yet known, as until now, even in the deepest shafts, the bottom or bed-rock has not been touched, and as gold is seven times heavier than gravel the richest beds must yet be found resting on the bed-rock. . . . The gravel beds which form the Tacuah Valley are auriferous throughout; year after year the upper layers of these beds are washed by the natives without showing a diminution of the metal. With proper pumping apparatus it will be very easy to sink shafts to the bottom of the valley, where the gravel must without doubt be of immense richness."

African Times, Oct., 1879: . . . "It is only by companies and similar organisations operating under skilled management, and with a moderate, but sufficient, capital that the hidden wealth—the rich stores of gold—so great that one fears to describe it as it really is through fear of being charged with wild exaggerations, can be brought to light and utilised for the benefit of those interested, and of the world at large, which is now craving a yield of gold from some source or other that shall bring up the present supply of about 18,000,000*l.* sterling to 35,000,000*l.*, at which the supply stood a few years since. So far as we know at present, it is only our long-despised West Africa that can make up this large deficiency of 16,000,000*l.* or 17,000,000*l.* a-year, and we fully believe she can do it." The importance of this colony has not yet been fully appreciated by capitalists, but it cannot be long before they perceive that in the Gold Coast colony we have a mine of wealth which will perhaps be found to surpass any other colony belonging to the British Empire. The miner has gone there, and wherever he has gone prosperity and civilisation has trodden closely behind him, for he is the pioneer of progress. Whatever difficulties there are in opening up a new country the hands of the miner lift them away. What England has wanted to employ the vast energy at her command is a new country. We of all people on the face of the earth are the builders up of nations; indeed, no nation at any time has accomplished anything so great in this respect. We have spent time, men, and money enough in exploring the great African continent, and proved it to be immensely rich. Its capacity for development can only faintly be understood through the records of the men (valuable though they be) who have travelled there. The time has now come for the knowledge we have acquired to be practically applied. The question of the key to the heart of Africa has been discussed again and again, and little has come of it; but, without any consideration as to the key of Africa, a few far-seeing men, by embarking their capital in the West African mining enterprises, are settling the whole subject. There can be little doubt about the success of mining companies on the Gold Coast, the testimony pointing to success is overwhelming, and, what is more, results will very shortly be in. WILLIAM GABBOTT.

Gresham House, Nov. 23.

THE DIAMOND FIELDS OF INDIA.

SIR,—By way of supplement to the Editor's answer to a correspondent in last week's Journal, that reports of the finding of diamonds in India are received by almost every mail, I subjoin a series of extracts from various sources bearing upon the subject, and trust that as there appears to be a probability of Indian diamond deposits being brought to the notice of British capitalists they will be of general interest. In "Jungle Life in India, or the Journeys and Journals of an Indian Geologist," by Mr. V. Ball, M.A., I find the following:—

March 12, 1876. . . . But before passing away from Sambalpur I shall give an account of what I have been able to ascertain regarding the occurrence of diamonds at Sambalpur, together with a sketch of such historical notices on the subject as I have been able to trace. Already this account has been published in substance elsewhere ("Records of the Geological Survey of India," No. 4, 1877), but as diamonds have always an interest for the general reader I believe that I do not err in reproducing it here.

In Rennell's "Memoir on a Map of Hindustan" (London, 1792, p. 240), the following passage occurs:—"On the west of Boad, and near the Mahanuddy river, Mr. Thomas passed a town of the name of Beiragurh, which I take to be the place noted in the Ayin Acbaree as having a diamond mine in its neighbourhood. There is indeed a mine of more modern date in the vicinity of Sambalpur, but this whole quarter must from very early times have been famous for producing diamonds. Ptolemy's Adamas river answers perfectly to the Mahanuddy, and the district of Sabare, on its banks, is said to abound in diamonds. Although this geographer's map of India is so exceedingly faulty in the general form of the whole tract, yet several parts of it are descriptive."

With reference to Beiragurh, I can find no place of that name in Sambalpur; and the late Mr. Blochmann, to whom I referred in the matter, informed me that the Beiragurh, mentioned in the Ain Akbari, is there stated to be in the Subah Berar, and was, therefore, probably not identical with the place mentioned by Mr. Thomas, according to Col. Rennell. In Ptolemy's map (Asiae x. tab. "Geographiae libri Octo, Gr. et Lat. Opera P. Bertii Lugduni." Bat. 1618, fol.), the Adamas flus flows into the Gangeticus sinus (Bay of Bengal), midway between the Cosamba (Balasore?) on the north, and Cocala (Sicacole of Arrowsmith's map, the modern Chikacole). The Dosaron and Tyndis rivers probably represent the Godavari and Kistna, so it is very likely that the Adamas may safely be identified with the Mahanadi. Ptolemy represents the Adamas as flowing through the district of Sabare, across which runs the following description:—"Apud quos adamas est in copia, which is otherwise given in an earlier edition of the map (Tab. x. "Cosmographie," libri viii. Lat. Justi de Albano. Ulmae. 1486. fol.), Sabare i his labundat adamas. Both sentences read strangely from a classical point of view, but mean that in Sabare the diamond occurs in abundance. The upper portion of the river passes through a district named Cocconage, which would include Chutia Nagpur. There are good reasons for believing that diamonds were found in Chutia Nagpur also. The following notices on the subject I quote from a paper by the late Mr. Blochmann (Journal Asiatic Society of Bengal, Vol. XL):—"Kokrah (the ancient name of Chutia Nagpur) was known at the Mogul Court for its diamonds, and it is evidently this circumstance which led the generals of Akbar and Jahangiri to invade the district. I have found two notices in Kokrah in the Akbarnamah, and one in the Tuzuk-i-Jahangiri, from which it appears that Chutia Nagpur was ruled over in 1585 by Madhu Singh, who in that year became tributary to Akbar. He was still alive in A.D. 1591, when he served under Man Singh in the Imperial Army which invaded Orissa Tuzuk-i-Jahangiri (p. 155):—"On the 3rd Isfandiarmuz of the tenth year of my reign (A.D. 1616) it was reported to me (Jahangiri) that Ibrahim Khan (Governor of Bihar) had overrun Kokrah, and taken possession of its diamond washings." This district belongs to Subah Bihar, and the river which flows through it yields the diamonds."

When Sambalpur was taken over by the British in 1850 the Government offered to lease out the right to seek for diamonds, and in 1856 a notice appeared in the Gazette, describing the prospect in somewhat glowing terms. For a short time the lease was held by a European, at the apparently low rate of 200 rupees per annum, but as it was given up voluntarily, it may be concluded that the lessee did not make it pay. The fact that the Government resumed possession of the rent-free villages, while the Rajah's operations had been carried on without any original outlay, materially altered the case, and rendered the employment of a considerable amount of capital then, as it would be now, an absolute necessity. Within the past few years statements have gone the round of the Indian papers to the effect that diamonds are now occasionally found by the gold-washers of Sambalpur. All my enquiries failed to elicit a single authentic case, and the gold-washers I spoke to and saw at work assured me that such statements were unfounded. Moreover, they did not expect to find any, as I observed that they did not even examine the gravel when washing.

With regard to the origin of the diamonds, the geological structure of the country leaves but little room for doubt as to the source from whence they are derived. Coincident with their occurrence is that of a group of rocks, which has been shown to be referable to the Vindhyan series, certain members of which series are found in

the vicinity of all known diamond-yielding localities in India, and in the cases of actual rock-workings are found to constitute the original matrix of the gems. In several of the previous accounts the belief is either stated or implied that the diamonds are brought into the Mahanadi by its large tributary, the Ebe. It would not, of course, help the point I am endeavouring to establish to say that the Ebe, at least within our area, except indirectly (by a few small streams which rise in an isolated outlying hill, called Gotwaki. It should be stated, however, that one of the tributaries of the Ebe, the Icha, far away in Gangpur, is said to produce diamonds; but the statement needs confirmation, and the geology of that part of the country is at present quite unknown. Near its sources in Chutia Nagpur, I have heard the Ebe spoken of as the Hira Nad, or Diamond River, is not fed by waters which pass over Vindhyan rocks, but I have the positive assurance of the natives that diamonds have not been found in that river, although gold is, and has been, regularly washed for. On the other hand, diamonds have been found in the bed of the Mahanadi as far as Chanderpur, and at other intermediate places well within the area which has been exclusively occupied by the quartzites, shales, and limestones of the Vindhyan age.

The fact that the place (Hira Khundi) where the diamonds were washed is on metamorphic rocks may be readily explained by the physical features of the ground. The rocky nature of the bed there, and the double channel caused by the island, afforded unusual facilities for, in the first place, the retention of the diamonds brought down by the river; and, secondly for the operations by which the bed could on one side be laid bare, and the gravel washed by the simple contrivances known to the natives.

It is impossible to say at present which the bed or beds of rock may be from whence the diamonds have been derived, as there is no record or appearance of the rock ever having been worked, but from the general lithological resemblance of the sandstones and shales of the Barapahar Hills, and the outlier at Borla, with the diamond-bearing beds, and their associates at Parma, in Bhandelkand, and Banagenpilli, in Karnul, I have very little hesitation in pointing to these rocks, as in all probability including the matrix. Above Padampur the Mahanadi runs through rocks of this age, and I should therefore, strongly urge upon anyone who may hereafter embark upon the undertaking of searching for diamonds in Sambalpur to confine his operations in the first instance to the streams and small rivers which rise in the Barapahar Hills, and join the Mahanadi on the south. Besides the obvious advantage of being—as I believe would be found to be the case—close to the matrix, these streams would, I think, be found to contain facilities for obtaining a sufficient head of water for washing purposes. Such works would require but a few labourers, and could be carried on for a much longer period every year—say, for eight or nine months—than would be possible in the case of the washings of the bed of the Mahanadi itself.

According to the accounts received by me the southern channel of the Mahanadi used not to be emptied in the Rajah's time; but from various causes I should expect it to yield proportionately a larger number of diamonds than the northern. In the first place, the stronger current in it would be more efficient in removing the substances of less specific gravity than diamonds, while the rocks and deep holes in it afford admirable means for the retention of the latter. Again, it is in direct contact with the sandstones and shales (presumably diamond-bearing) of an outlying ridge of a village near Borla. Owing to the greater body of water to be dealt with it would be found to be more difficult to divert than that which flows in the northern channel, but the result in a greater harvest of diamonds would probably far more than compensate for the greater expenditure incurred.

In the country to the south of Sambalpur, in Kariar and Nowagurh, where rocks occur of similar age to those of the Barapahar Hills, I have failed to find any traditional record of diamonds having ever been found or searched for. It is just possible, however, that the names of several villages in which the word Hira (diamond) occurs may have reference to some long-forgotten discovery. In addition to diamonds, pebbles of beryl, topaz, carbuncle, amethyst, cornelian, and clear quartz used to be collected in the Mahanadi, but I have not seen either sapphires or rubies. It is probable that the matrix of these, or most of them, exists in the metamorphic rocks, and is, therefore, distinct from that of the diamond.

London, Nov. 23.

INDIAN INSPECTOR.

THE GOLD AND DIAMOND FIELDS OF SOUTH AFRICA.

SIR,—Since I last wrote mining has not changed here, but the rich discoveries of gold in the Lydenburg district of the Transvaal is causing some excitement; but most people here are so struck with diamond scrip that they are not in a position to touch anything else. I have seen some very fine samples from Lydenburg district taken from Spitz Kop and Waterfall Creek. The quantities varied from 3 or 4 ozs. to 2000 ozs., and was of splendid quality. I informed you in my last that the Victoria Mine was to be proclaimed public, and the claims given out on Oct. 24. This new El Dorado (?) is about 30 miles from Kimberley, consequently to be in good time most of the people left the day beforehand—Sunday. The excitement appeared to be intense, and although Sunday was about one of the most dusty days I have seen in Africa, ladies and gentlemen rushed off through the dust-storm to try and get a claim in the new mine. Persons in England can form very little idea of the rushing of a new mine as I saw it on Sunday. Sabbath bells clattered to empty churches. The dynamite explosions ceased in the mine. Parsons, publicans, and prayer-leaders were squeezed into a vehicle not too large for half their number. Barbers, bakers, butchers, and barmen bestrode horses representative of their profession. Coblers, carriers, druggists, and draymen, tried with their four-in-hand to pass on the road the miners, merchants, and Malays, who took things more comfortable. Such a motley medley of racing races are seldom seen on any road. The wind roared, the dust was almost blinding, and collisions were consequently frequent. Kimberley was almost deserted and its inhabitants were off either to sleep at Barkley or in the open air at the mine. Barkley is a brown town, on a brown barren rock, with here and there brown deposits of brown boulders. There is a large quantity of grog sold at Barkley, and there are two hotels, but the great attraction of the place is the billiard table; but its once green cloth is now yellow, and is patched up something after the Joseph's coat kind of manufacture. Sunday was a grand day for Barkley, as the Kimberleyites arrived there, dry, dusty, and famished, and saints and sinners proceeded at once to have their half parched throats. Roughs might be seen drinking out of good glasses, bankers and parsons out of bottles, and Good Templars might be seen carrying bottles of beer, whiskey, and soda to imaginary friends around the corner.

On the Monday morning all were astir at daybreak, and off to the new mine. No person but the prospector can have but one claim, and every person who has a claim must be standing on his or her claim at the time they are given out. Consequently persons who manage to get the first intelligence of a new discovery often get claims for a whole family. On the present occasion there was a fair sprinkling of the fair sex, but as some appeared to have slept on the felt all night in their Sunday suits they did not present that madonna-like appearance which characterises the ladies of Kimberley generally. Mr. Franklin, the Inspector of Mines, gave out all the claims in a very satisfactory manner, and the day passed off quietly. Unfortunately there was one death by drowning in the Vaal river. Many of the parties who got claims left Kimberley at racing speed, and talking of 10,000 per claim returned at about two miles per hour, and ready to sell at any price. Before the Victoria Mine claims were given out people spoke of the place as the richest diamond mine ever found, but since no person hears a sound of the concern, and the one solitary pit sunk by the prospectors is all that remains to show that for a long time the concern has been shepherd by veritable sleepers.

The great scheme in contemplation here is to form the whole of the Kimberley Mine into one company; but the originators of this scheme must certainly have some ulterior object, as past and present experience proves that the smaller the companies the better they pay. In order to convey a correct idea of the nature of the Kimberley Mine, it is necessary to point out that the diamond formation

presents the appearance of being at some time a large crater filled with hot mud, which has since dried and become very hard. The surrounding rock for a depth of near 300 ft. is composed of alternate layers of aluminous, calcareous, and bituminous shales. Mixed with these shales are quantities of iron pyrites, which as soon as it comes in contact with the air ignites. Consequently it is an every day occurrence to see some part of the mine on fire. This treacherous shale is found to be resting on amygdaloid and greenstone rocks. Mr. Kitto, the mining engineer, in his official report to the Government in 1879, pointed out that the shale would always be insecure at a less angle than 45°, and that as soon as the side of the mine shall have been properly stopped down from the surface to the igneous rock at the above angle, the mine will be comparatively secure. As no other scheme for securing the sides of the mine has been suggested, Mr. Kitto's plan has been the only one hitherto adopted. But the means hitherto adopted for removing this dangerous reef has been ill adapted to the work, the last being by far the worst of the lot, and was about as effective as the old ladies' scheme of dipping the sea dry with a limpet shell. Until the whole of this loose shale has been removed it will always be a liability against the mine. At the present time by far the greater number of claims are buried by fallen reef or water. Taxes are made as regularly on claims that have been buried for three years as on claims in the centre of the mine which has always been clear.

If all the companies in the Kimberley Mine were to amalgamate they could do away with the mining board, and discontinue the working of the reef for a time, and thus save fully 200,000*l.* per annum. They could discontinue working the claims under the reef, and concentrate all their attention on working claims in the centre of the mine, and by so doing pay very large dividends for a short time. Shares would go to a fictitious price. But this mode of working would soon come to an end, and the latest purchasers would be in all probability struck with nothing but a reef liability of over a million sterling. The Kimberley Mine amalgamation scheme gives me the idea of having originated with intending sellers, consequently capitalists should watch the movement carefully, and keep themselves well advised by honest mining engineers, or they may find themselves the unfortunate possessors of an expensive "White Elephant." There is still much sickness on these fields, but the return of Dr. Jamieson has already had a very beneficial effect, as his genial countenance and cheering voice does more good in a sick room than 90 per cent. of all the drugs administered. A nice shower of rain on Sunday has had a very beneficial effect on the temperature since.—*Kimberley, Oct. 23.* CORRESPONDENT.

INDIAN GOLD MINES—WYNAAD DISTRICT.

SIR,—Mr. King's recent remarks at the meeting of the British Association at York as to the auriferous quality of the quartz of the Wynaad in general, and of the North Wynaad in particular, had a most serious and depressing effect on the holders of shares in the various Indian gold mining companies, not only in England but also in India. This mail brings a very strong protest against Mr. King's statements, and will no doubt draw from that gentleman some further information as to how he came to the conclusions he gave to the public at York. For my own part I can only say that I visited Vythery and Terriott in April last, and was most remarkably impressed with what I saw, and have no doubt that in the future North Wynaad will prove equally as rich as South-East Wynaad in auriferous reefs. I brought with me a large quantity of quartz from reefs in the North Wynaad, which have given very good results. I have no doubt that when the results of the crushings now going on in South-East Wynaad are made public, property in the north will in spite of Mr. King's warnings be eagerly sought after. H. TAPP.
Milton-terrace, Parson's Green, Nov. 24.

THE ST. JOHN DEL REY COMPANY, AND THEIR SLAVES.

SIR—My correspondent in Brazil, under date Oct. 19, says—The Catta Branca slave question as regards the 20 years wages due to the slaves who were in the service of the St. John del Rey Company has been carried to the highest tribunal of the Empire, and a decision has just been given to the effect that such wages are due and must be paid by either the non-existing Catta Branca Company or the existing St. John del Rey. He adds that the case excites much interest, and he is requested to make inquiry in London as to the situation. I know of no way better than to ask through the Journal, in the hope that a statement from the company will be given in reply. A suit is to be commenced to decide how much is due and who is to pay. The Government have the matter in hand.

BRAZILIAN INQUIRER.

THE CALLAO BIS GOLD MINING COMPANY.

SIR,—In April last two letters of mine referring to this concern were published in the *Mining Journal*. I stated that unless the directors of the Callao Bis Gold Mining Company can justify their proceedings in disposing of a loss of 12,421*l.* of the Sosa-y-Mendez concession, after it has been proved by means of four assays that it yielded the almost fabulous quantity of 27 ozs. of gold to the ton, I hope my fellow shareholders will convene a special meeting to appoint a committee to fully investigate the company's affairs from its formation to the present time, more especially to examine the Articles of Association, to find out if the present directors were empowered to dispose of the Sosa-y-Mendez concession, although a very large section of the shareholders entertained strong objection to the sale. If the directors had not that power then the sale should be cancelled. At the same time the shareholders ought very politely to ask the directors—General Nuthall and Dr. Nelson—to vacate their seats at the board, as their self-imposed task was beyond my comprehension, as demonstrated by facts. The first part of my advice has, through the instrumentality of Mr. Staples, been efficiently performed. A special general meeting was held, a committee appointed, my name was proposed and seconded on two occasions to act as one of the committee. I declined the honour, as there were more efficient gentlemen present, who could by their business habits much better serve the interests of the shareholders than one accustomed to plough the briny ocean from his youth upward. The committee have had an arduous task to perform; they have shown much zeal in the performance of their duty, and richly they deserve the thanks of the shareholders not only of this company but of the Sosa-y-Mendez as well. We have repurchased the Sosa-y-Mendez, which has cost us the following sums—8333*l.* to Private Investors' Association; 315*l.* voted as honorarium to committee; 153*l.* to meetings, printing, postage, &c.; 4000*l.* to floating the Sosa-y-Mendez; total, 12,800*l.* The shareholders have surely to thank someone for this heavy loss. The news received from the mines for some months past has been very encouraging in every way; some thousands of tons of quartz showing free gold ore ready for stamping. The whole of the machinery is expected to be in full working order in three months from this, when large returns are expected to be made. A block of quartz weighing 42 lbs. was assayed by Mr. F. Claudit, which gave 26 ozs. to the ton; selected portions sent at the same time 1635 ozs. of gold and 129 ozs. of silver to the ton. The last reports from the mines state:—The Callao miners have discovered and were working what they believed to be the veritable Callao lode, within 200 ft. of this company's mine. The Callao lode runs direct through the Callao Bis, the adjoining lands, and into the Sosa-y-Mendez, showing this company to possess most valuable property. When General Nuthall and Dr. Horatio Nelson insisted on disposing of the Sosa-y-Mendez against the desire of the shareholders and their co-directors—Messrs. Dunstan and Gladstone—showed their great good sense in resigning their seat at the board, as they evidently did not wish to be accused of countenancing such a suicidal act. Since then Mr. C. Ronaldson has been elected a director. It would have been fortunate for this company had this gentleman joined it in its inception. The second part of my advice I am sorry to see the committee have not thought proper to carry out at present; it is to be hoped they will do so at the next meeting. In forming the new company they elected themselves directors of it, thereby getting large salaries in both companies. In the Articles of Association appears the following—"The directors cannot be removed before the general meeting in August, 1883." Whoever heard of such a clause as that? It must be repealed as soon as possible, when I hope Mr. Staples will get them

removed, and have two well qualified business men ready to strengthen the board. With Messrs. McDowell, Cockburn, Rumball, and Davis, with Mr. Charles Ronaldson as Chairman, we shall see before this time next year that this company will rank nearly as high in market value as the Callao. With the money already subscribed for Sosa-y-Mendez, and with the additional 50,000*l.* to be raised, we shall be able to work both mines, when we shall have two of the most valuable properties in the world. The shareholders of the London, Chatham, and Dover Railway Company presented Mr. Abbott with a purse of gold when he rescued the company from being incorporated with the South-Eastern Railway Company. I hope two or more City men will constitute themselves into a committee, and invite the shareholders to subscribe liberally to present Mr. Staples with a similar testimonial for his praiseworthy and zealous conduct, rendered at much personal inconvenience and loss of time and money.

Kensington, Nov. 23.

RAMSAY COOKE, R.N.

RUBY AND DUNDERBERG AND RICHMOND CONSOLIDATED MINING COMPANIES.

SIR,—Your correspondent "Observer" seems to wonder that Ruby and Dunderberg shares should be selling under 5*l.* per share, or at 50 per cent. discount, whilst Richmond Consolidated fetch 17*l.*, or over 200 per cent. premium. The reason of this is not far to seek, as the latter are paying on their present price quarterly dividends amounting to 12 per cent. per annum, whilst the former pay at present *nil*. Now that recent discoveries have placed it beyond a matter of doubt that rich deposits of ore exist below the 600 fm. level in the Richmond Mine, higher dividends than 10s. per quarter in future years may reasonably be expected, and in my opinion a great rise in the value of the shares is at hand, and I back my opinion by investing any spare money I have in them. I may take some credit to myself for having, through the medium of the Journal, recommended my fellow-shareholders to keep firm hold of their shares when the "bears" had depressed them to 15*l.*; they are now at 16*l.* 10s. to 17*l.* after payment of 10s. dividend, and this price is considerably lower than that of other first-rate mining companies, such as Tharsis, Sierra Buttes, Panulillo Copper, Rio Tinto, &c., taking relative dividends into calculation, according to which the Richmond are the cheapest mining shares in the market. NEVADA.

NOUVEAU MONDE MINING COMPANY.

SIR,—The patience of shareholders has almost passed into a proverb, but few acquainted with the facts will be bold enough to deny that in the case of this company it has been sorely tried. Eighteen months ago the members were called together in general meeting, and listened to the gratifying announcement by the Chairman of the London board that they had before them the offer of a large concession of valuable mines in Venezuela, one of which (the Nacupai) adjoined the celebrated nine Callao. The acquisition of the property was completed soon afterwards, but the talented manager (Mr. Charles Oxland), for some sufficient reason no doubt, accepted a new engagement, and the development of the mines was as a consequence committed to other hands. From that period, so far as tangible results are concerned, the history of our mining operations in any practical sense may be considered as nearly a blank. I am quite aware that Mr. Lambert's report has been issued, and that Capt. Anthony sends periodical despatches to the board. As regards the former document, its principal value apparently consists in the enumeration and plan of the different sets acquired. It can scarcely be said to contribute much in the shape of either novelty or value to the stock of information previously possessed, as may indeed be inferred from its failure to give buoyancy to the share market when it appeared. A few extracts of not much importance have been culled from Capt. Anthony's despatches, but that which would have interested shareholders—a description of the different lodes, their underlie, and mineralogical features—it has not been thought proper to put in circulation. We also look in vain for any statement of those results of working above water level to which Capt. Anthony was forthwith to devote his attention pending the arrival and erection of the pumps, and from which considerable returns were expected. Much of the present haze in reference to the company's position would have been avoided if the promise so explicitly given by Mr. Lewis, as representing the grant in June last to call a general meeting so soon as the exchange of the old shares was effected, had been fulfilled. That simple operation, subject to the absolute control as it was of the grant, as to time could under no conceivable circumstances have required more than a couple of months, particularly as it was represented to be rapidly progressing. Whether this further appeal for a general meeting is to have the fate of preceding ones must rest very much on the view taken by the managing body as to their responsibility to carry out a distinct pledge to shareholders. These latter if they are true to their own interests will hardly be satisfied to let matters remain in their present dormant state without bringing some strong pressure to bear.—*Nov. 22.* VIGIL.

GELLIVARE IRON ORE EXPLOITATION.

SIR,—One prominent feature in the Gravitation Railway System, to which I have not called attention, is the accelerative or accumulative velocity, as shown in the following tabular statement:—
The first column designating seconds of descent.
The second " " velocity acquired in feet per second.
The third " " space in feet traversed in the aggregate time.
The fourth " " space in feet per second.

1.—32 1-6th	16 1-12th	16 1-12th
2.—64	64	48
3.—96	144	80 5-12th
4.—128	256	112 7-12th
5.—160 5-6th	402	144
6.—193	579	176 11-12th
7.—225 1-6th	783 1-12th	209 1-12th

And so forth.

Placing its incomparable advantage over existing surface railway system beyond controversy; as, for instance, a train of coal-laden wagons (coal being the largest element of transport in the United Kingdom), starting from Hexthorpe, the marshalling point of coal traffic adjoining Doncaster, for King's Cross, the speed of which is naturally regulated and limited by the power of the locomotive and the extent of the load, so that when having attained the maximum speed of (say) 20 miles an hour, such cannot be exceeded, but is liable to diminution—whereas by the gravitation system, No 3 column, showing the space in feet traversed in the aggregate time (say) from a state of rest 16 1-12th feet initial velocity about 11 miles an hour the first second, to 783 1-12th feet in the seventh second, accumulating every second, an incomparably increased space is run, as compared with the uniform non-accumulative mileage on surface railways. The eminent mathematician Charles Hutton, in his *Course of Mathematics*, states, p. 856—"The same velocity is acquired whether the descent is perpendicular or down any plane, curve or curves (p. 857), the velocity acquired attaining the same height in the ascent." As rolling-stock descends rapidly by gravity down any inclination of 1 in 200 there is no difficulty in deducing a conclusion or realising the incalculable advantage set forth. It is not in the nature of the locomotive by increased speed in the descent to make up the loss of time on the ascent, as when a certain rate of speed is acquired it cannot be exceeded, and the acceleration must be checked by that *valde necum* the brake, inseparable from surface railways. No brake is attached to gravitation rolling plant, velocity constituting its enormous power, which cannot be fully utilised with the locomotive; but belongs specially to my system, with the centre of gravity below the rail, as precited.

George Stephenson gave evidence before a Parliamentary Committee on the Liverpool and Manchester Bill as follows:—"I dare say every person has been over ice when skating or seen persons go over, and they know it would bear them at a greater velocity than if they went slower; when it goes quick the weight, in a measure, ceases." An eminent Manchester engineering firm restricted the speed of their locomotives to 20 and 25 miles an hour, an accident having happened descending the Sutton inclined plane, by leaving the rails, the engine being an encumbrance over a great part of each

undulation, owing to the loaded wagons attaining by gravity a greater velocity than the engine could effectually command in advance of them. An important experiment performed at the Adelaide Gallery showed a greater load was brought from the bottom of an inclined plane to the summit, where the plane is formed of a series of undulatory planes, than when formed in a straight line. The first locomotive was made by Richard Trevithick, in 1802, which drew 10 tons of iron at a speed of 5 miles an hour; and the first by George Stephenson, in 1814, ran 6 miles an hour with a load of 30 tons. It must be conceded that rapid strides have been made in the construction of railway engines when we behold the speed attained at the present time, the swiftest locomotives being pigmies of speed as compared with the gravitation system. How apposite in this age, when we witness the slow progress of science retarded by systematising unsound knowledge in the garb of truth, with unsupported assumption, and drawing conclusions from reasoning not based on truth, but on mere suppositious facts on the following approximate lines of the immortal bard:—

Celestial light shine inward,
And the mind thro' all her powers irradiate,
That I may discourse of things unintelligible
Scientifically orthodox to superficial minds.

Little Tower-street, Nov. 22.

W. J. THOMPSON.

MARBELLA COMPANY.

SIR,—The demand for ore for steel making purposes which has sprung up in America during the last two years has been caused by the very large number of steelworks erected in the United States during that period. The ore is imported into America at a merely nominal duty. The distance, and therefore the heavy land carriage from the steel-making ore mines in the States to the coal fields where these works have been erected, enables the freight from Europe to America to compete successfully against said land carriage. This circumstance, combined with the nominal duty, will render said business both permanent and increasing. During this year the reports of the Mediterranean alone will have exported 500,000 tons to the States. This company is getting a large share of this business, as by the end of the year about 70,000 to 80,000 tons will have been exported by the company to America. In looking over the statements presented to shareholders I find that in 1880 a profit of 8245*l.* 7s. 9d. was made; this profit was, however, swallowed up by the combined losses of 1878-79, leaving a balance of 1675*l.* 16s. 6d. still to the debit of revenue account. The account rendered to the shareholders for the first half of this year shows a gross profit of 8947*l.* 1s. 7d., from which falls to be deducted the above mentioned 1675*l.* 16s. 6d. and 1869*l.* 9s. 11d., being an amount expended on the railway and pier through exceptional circumstances, as explained in the report, thus leaving a net profit standing to the credit of revenue account of 5401*l.* 15s. 2d. With regard to the business of the second half of the year, the directors anticipated "a considerable improvement in this respect during the remaining portion of the year." Assuming, therefore, the production for the latter half of this year to amount to 40,000 tons (the first half having turned out 30,000 tons) at 13s. to 14s. f.o.b., a profit of at least 8s. per ton will result. It must be remembered that the directors stated that the results of the first half of this year were not so good as might have been expected, by the fact that they were delivering ore at old low priced contracts, and that these were all worked off; the contracts now existing extend into the first eight months of next year for the whole production at the above prices. I, therefore, congratulate my fellow shareholders on the greatly improved position of their property.

London, Nov. 24.

AN OLD SHAREHOLDER.

PETROLEUM IN HANOVER.

SIR,—I observe by last week's Journal that attention is being called to the Petroleum Industry in Hanover. As some misconception appears to exist as to the actual present position of affairs, perhaps you will permit me to make a few remarks upon the probabilities of success and the prospects that present indications hold out. One might almost imagine from the statements made from time to time that this industry had already been to some extent developed, and that a considerable area of the oil zone had been tested, and found to yield petroleum in paying quantities. Judging from recent personal inspection this is not the case, but the very reverse. Up to the present time comparatively very little has been done to test the territory.

The Hanoverian petroleum field is supposed to cover an area of over 4000 square miles, commencing at a point 60 miles north-west of Hamburg, and extending southwards to an imaginary line 80 miles in length, running due east and west, and situated about 20 miles south of Hanover. The indications that are supposed to fix the limits of this area are to a great extent problematical, but that petroleum actually exists in greater or lesser quantities within these limits is proved by the presence in certain localities of what in America are termed *surface shows* of oil—i.e., the presence of heavy oil upon the surface caused by exudation from the underlying strata. These surface shows exist in ten or twelve localities, distributed within the area I have mentioned. They vary somewhat in character and in the amount of oil production, but no one can inspect some of them without being convinced that large quantities of petroleum must exist in the vicinity. I say *some* of them, because in these instances one actually sees the oil continuously rising out of the ground into the shallow pits of water formed to catch it; and I have further ascertained that in some cases the average yield during the summer months, when alone these pits are worked, amounts to ten barrels per diem, and that they have been worked for 200 years. Amongst other pits are some near Oedesse, now called Oelheim. It is here that up to the present time the only bore-holes have been drilled into the true oil-bearing strata. The oil-producing area at present tested at Oelheim does not exceed 150 acres, and the bulk of the oil now produced is pumped from an area of some 40 acres only, which I believe now yields from 500 to 700 barrels of oil per diem. This production would have been very much greater had the bore-holes and wells been drilled and cased in a proper manner. The system pursued at Oelheim has been the cause of ruin to some of the best petroleum territories in America, where special laws have since been passed to regulate the industry. The petroleum bearing sandstone strata are reached at Oelheim at the shallow depth of 220 to 280 ft., and some of the wells have each produced as much as 500 barrels per diem when they first struck the oil—a highly satisfactory result, and one which might have been perpetuated but for the faulty system adopted. About 19 wells have been drilled, but of these some are unproductive. In the immediate neighbourhood other wells are now being drilled, and I believe a small hole near Wehnsen has struck the sand rock, and got oil. The main fact, however, remains that the bore-hole which have actually reached the first strata of true oil-bearing sand rock are few in number, and that the area actually proved is confined to a very small fraction of the oil zone.

Systematic boring operations upon proper principles are, however, now being proceeded with in localities situated 30 miles to the north-west and 20 miles to the south-east of Oelheim. Should the sand rock be reached in these borings, and prove productive (though it is believed that the strata are fully 600 ft. from the surface), the probabilities of the ultimate success of the industry will be vastly increased. As to surface rights they have for the most part passed out of first hands, but they may be obtained for very reasonable prices, or for a royalty upon the produce, so long as the buyers bind themselves to bore upon the lands without unreasonable delay. A company properly constituted to work on such a basis, but whose main object should be to expend its capital upon boring plant and in putting down wells rather than in the acquisition of any particular property would have a good chance of success. The cost of the plant would not be great, steam-engines and boring tackle being the most expensive items. I have reason to believe that 20 complete sets of apparatus, with the necessary skilled labour and all requisite lands, could be obtained and started to work for less than 60,000*l.* by the use of which, with ordinarily good fortune, at least 100 wells per annum would be finished. Assuming one-half of these wells to be unproductive, and the remainder to yield an average of four barrels per diem—one of which would represent the royalty—the result would prove highly satisfactory to the shareholders. It would probably be found that better results are thus obtainable than by giving high prices for boring rights, even where the ground has been tested

or is in the immediate neighbourhood of the existing producing territory.—*London, Nov. 21* C. O. L.

MINING IN SPAIN—ASTURIAS.

SIR,—An urgent call from Gijón soon broke up our stay at Vega de Rivadeo. We started on our return by the northern coast road. As there are several points of some interest in this route I think it well to mention them in succession. We took a boat at the Vega to convey us to Castropol—a small town on the eastern shore of the Rivedeo Bay, and distant about six miles north from the Vega. On our way we passed by a mine of spathic iron ore, containing specks of copper pyrites, which seem to have passed unnoticed by the proprietors. They worked out a parcel of this some years ago, and sold it to some of the smelters of the Gijón district, who after trying it pronounced it unworkable. The ore is very abundant—I secured specimens, and proceeded. Castropol is built upon the upper silurian series. Here we had to take our seats in a very rickety coach, which is the only public conveyance between that town and Luarca. The scenery is interesting throughout the whole of the route. Here and there the remnants of pine forests are to be seen. To the north lies the Bay of Biscay, ever unquiet; and to the south and east ranges of mountains, covered with verdure and woods, and dotted by pasturing flocks. As we gradually ascend along the road we leave the silurian, underlying a long stretch of silicious conglomerate, showing us that we are in the first stage of the Devonian. This continues until we near Porcia—a small hamlet of some 60 houses, distant from Castropol about 10 miles. Prior to reaching this place we see some excavations on the road side, on some crops of thin lodes of magnetic iron ore carried in beds of grey slate, and nearer still to the town we pass a road section showing several crops of the same ore in greater abundance. I secured samples of these, and with a view of estimating their value made an assay of them with the following result:—

Fe ² O ₃	56.17	SiO ₂	23.75
FeO.....	10.73	P ² O ₅86
Mn ² O ₃12	CO ₂	1.10
Al ² O ₃24	S.....	.18
CaO.....	2.97	H ₂ O.....	3.45
MgO.....	.24		

I have written it down as of little value. During the last Carlist war in Biscay, and whilst Bilbao was closed, a quantity of this ore was worked out to supply the smelters in the Gijón district. As it is within a kilometre of the shipping port it would only cost the proprietors about 2s. 6d. per ton f.o.b. There is at present, however, but little probability of its being utilised. In the district there is a very large deposit of slag from some ancient forges, showing that extensive workings had been carried on here a long time ago.

We reached Navia in due course after a severe jolting. Navia is a prettily situated town, built on both sides of the river of the same name, and near its mouth—the river being crossed by a handsome girder iron bridge, resting on cast-iron cylindrical pillars. The writer was met here by a friend, who during the afore-mentioned Carlist war enjoyed some years of prosperity by working a blast-furnace, and selling the product at a high price to local and other foundries. The termination of the war terminated too his run of prosperity in that branch, compelling him to blow out his furnace, and from then to the present it has stood idle, with but little prospect of its ever again being blown in.

The district on both banks of the Navia, from Santo Emiliano to its source, is heavily timbered, oak predominating as a class. As soon as the iron smelting ceased to be remunerative my friend turned his attention to lumber, and has since that date done a pretty extensive business in sleepers, and has also attempted to manufacture and sell staves. He utilises the river as his general carrier, throwing in the sleepers separately at the place where they are cut, and letting them float down with the stream to within a short distance of his yard, where he keeps a look-out man to fish them up as they arrive. He showed me over his wood-cutting and stave-dressing machinery, and I had to express my pleasant surprise at finding in this (comparatively) out of the way place everything fully fitted up on recent and the most improved designs. He had met with difficulties in the introduction of his staves to the market; time will show whether he will ultimately succeed, as he deserves.

I was requested to examine several important spots in this district for minerals, and samples were given me of several—amongst others some of galena, arseniates of cobalt and nickel, copper pyrites and munda, and a hard yellowish spongy carbonate of iron, which yielded 47.5 Fe on assay. All of these were reported to be very abundant. As I was pressed for time the examination of them must be reserved for a future occasion. We started again for our destination. Navia is built on the upper silurian (slate predominating). The same series continues for a distance of about 5 miles along the road, when we meet several heavy crops of quartzite, interlying siliceous sandstone and thin beds of slate. These continue for about 3 miles, and ultimately merge into a regularly stratified blue slate, which continues to Luarca, a further distance of 3 miles. The level portion of Luarca comprises only a small part of the town. This portion consists for the most part of rows of straggling and ill-constructed houses on either side of the small river, which falls into the sea here, and whose narrow estuary forms the port, with a depth of about 12 ft. of water at ebb tide along the quay, where ships lie well sheltered and in perfect safety. The remaining portion of the town consists of houses built on the protruding ledges of the slate cliffs. These cliffs have (as in all the lower silurian outcrops) a rugged and barren appearance, and as lime is a commodity which in this town and its surroundings is conspicuous by its absence, the dirty colour of the fanged walls has anything but a pleasing appearance. When we reached the town a cattle fair was being held, and the weather was unpleasant, owing to the falling of a drizzling rain, very nearly akin to a healthy Scotch mist. Our impressions were, therefore, received under difficulties, since through the tramping through of so many kine, and their owners clogged in heavy wooden madreñas, the streets were foully dirty.

We had to stay until the following day, when we took diligence for Oviedo, distant 66 miles. I found that several patches of the slate were being worked for both slates and slabs, and a fine tenacious product resulted. The trimmers are sadly deficient in their work through no regular form being given to any single piece, nor was there the slightest uniformity in thickness, nor any attempt made at classifying. As the slates come away from the quarry so are they piled on to the house-tops, wanting in neatness, fit, and uniformity, weighing about three times as much as a roof might weigh, and consisting only of a huddled mass. The silurian continued to Espina, with one interruption only—that being a cropping of old red sandstone underlying a large patch of carboniferous limestone and shales, which seemed to be an undoubted piece of the continuation of the Tineo coal measures. After leaving Luarca some 10 miles behind we passed the buddles and settling-pits belonging to the Muñas manganese mines. These mines lay on our left at some distance from the road. They are at present paralysed for want of working capital. There are in all five locations, containing a large area, all of which are reported to have lodes of manganese. I obtained samples from two of these mines, which together yielded on assay 67.75 per cent., and a picked specimen out of one of them gave 73 per cent. Mn²O₃. These, like many other mines in this country, are in the hands of people who have neither the capital nor the capacity to work them. They hold them, paying the yearly Government royalty, intending at some future time to effect their negotiation. I was informed that work had been attempted for account of an English firm some years ago; but reckless management very soon outran the constable, and no beneficial result was obtained. The ore is reported to be abundant, and with intelligence and a moderate capital they could undoubtedly be worked successfully.

On our right lies Navegas, the district where such extensive remains of workings exist since and prior to the time of the Roman occupation, and where gold is found at the present by washing the debris. I have in a former letter referred to this. The scenery along the road to Espina, after leaving Luarca behind, we found to be very beautiful, as we followed the windings of a river through a narrow wooded valley, with the hills on either side sloping away, clothed with verdure, and heavily timbered for the most part to their very summits. On a former occasion I have followed the road from

Espina to Oviedo, via Salas, Cornellana, and Grado, and will, therefore, for the present refrain from noting anything further to a future day, when I intend giving you some particulars of the gold-bearing districts of the Navia.—*Gijón, Nov. 18.* J. A. JONES.

THE DON PEDRO MINE.

SIR,—The shareholders of this unfortunate company do not appear to be able to shake off that apathy to their interests they have all along shown. Yet the question is a simple one, clear to the dullest mind. The success of the Don Pedro Mine solely depends on adequate machinery being provided to pump out the water, and this the administration has entirely failed to do. Although the directors have had at their disposal the sum of 50,000*l.*, they have spent but 2000*l.* in pumping machinery, and the rest has gone in wages. There seems to be but one explanation for this extraordinary waste, and for this disproportionate expenditure of the money, and that is that they tried to avoid the purchase of machinery costly at first, but which would have pumped out the mine years ago, yet which, to the eyes of the directors, would have appeared to have been a useless expenditure and a standing discredit to their management, as the mine being drained the engine would in all probability be of a power in excess of the altered requirements of the mine, and in trying to avoid this they have contrived to spend in wages, uselessly, upwards of 48,000*l.* I do not know who the shareholders are, but I have noticed that in not one account of any meeting do any practical questions appear to have been but about the working of the mine by any shareholder. In the last meeting no questions were asked as to the pumping machinery sent out, such as a man acquainted with machinery would put. I subscribed for the engine, but I know nothing about it; but I saw from the first extracts from the letters from the mine, that the engine was not of adequate power for the work; the straining, &c., showed that the engine was tried to the utmost of its capabilities, when there ought to have been a larger excess of power in hand in favour of the engine. As I do not know the mine, I cannot speak with certainty, but it appears strange to me that the pumping machinery was not divided into two parts, one part in the mine the other out of the mine, as the whole despised waterwheel (which has nevertheless shown itself of greater power than the new engine while it held together), conclusively proved that it was next to impossible to arrange the pump-rods for the great distance required without serious breakage, and yet in the new engine, the pump-rods are carried down the same distance, with the result of constant breakages and collapse of the engine. Why the whole could not be divided I cannot understand. These new explorations for gold could have been carried out before one would think, especially as the miners can hardly have worked more than half time the years the pumping has been going on. Can this presage a near demand for more money. The funds in hand are all but exhausted, and still we are no nearer the bottom of the mine than before. The directors have made a heavy call, what for I do not know. I trust it may be to pay for some auxiliary machinery, but I fear not. Since the shareholders decline to move, as I see the shareholders in some companies in a very similar position to the Don Pedro are doing, I shall await events and see what the result will be of any new application for more capital. I hear the amount subscribed was very small, which is another evidence of the spiritless character of the main body of shareholders of this company. No energy, no business capacity, nothing; only a capacity for swallowing dividends when they can. But one half-crown remains to be called up, and what do the directors and shareholders intend to do afterwards? A SHAREHOLDER.

MINERAL DEPOSITS.

SIR,—Anyone who has taken a geological survey of a mining district cannot help being struck with the number of mineral bearing lodes that form as it were a net-work with the cross-courses and elvan courses which traverse it, and although there are features which are peculiar to some mining districts when governed by analogy, opinions given on mineral deposits have often proved to be correct. In some of the unexplored portions of the county of Cornwall are mineral lodes presenting indications of a favourable kind, and will, no doubt, on being developed prove remunerative to their possessors. A close inspection of the granite range west of the Caradon and Phenix mines for some miles will afford an opportunity of becoming acquainted with a tin producing district. In several valleys will be found tin stream works in active work, and in other cases the remains of active labours. This alluvial tin is being extracted at a profit from the deposits in which it exists. Some of these alluvial deposits have been worked profitably a second time near the backs of lodes, and experience is that the largest quantity of tin is obtained nearest these lodes. In few cases have any mining operations been carried on the lodes that have been thus discovered, from the simple fact that enterprising men have not been aware of these facts. Another district further west in the county, the surface of which has been worked for its stream tin has been fortunate enough to have its lodes developed, and these have paid handsome profits; therefore it is very natural to expect to see this district some day with its dividend paying mines. Advantages of this kind for obtaining good mining property cannot always be embraced by those who need them, but only by those who are aware of their existence. K. G. Nov. 21.

THE GRIFFIN SILVER-LEAD MINING COMPANY.

SIR,—In last week's Journal you publish a report of the general meeting of this company, which conveys so wrong an impression of what really took place that I shall be much obliged if you will insert the following explanation.

In the first place, it is so written as to pretend that it is the work of impartial Press reporters present throughout; whereas the whole following Mr. Maudslay's speech appears to have been sent from the office of the company, and suppresses much that took place by cutting out all detailed account of my charges against the directors and others, and all the very pertinent questions and remarks of the shareholders in the room. At the conclusion of Mr. Maudslay's speech I explained that I had to make such a statement to the shareholders, questioning the conduct and competency of some of those connected with the mine, that I should be compelled to refer to such matters as untruthfulness and untrustworthiness, &c.; and, that although such words could be properly addressed to them privately in a privileged communication to shareholders, I should not feel at liberty to say all I knew in the presence of reporters, as publication might possibly involve me in an action for libel, and the truth of the statements be no defence if I publicly held up the directors, secretary, or (so-called) agent to contempt or ridicule.

The majority of those present immediately voted the withdrawal of the reporters, when to their great astonishment the solicitor, secretary, and Mr. Ellison (the one director present) produced "proxies" which they had obtained from absent shareholders (including the heavy voting proxy for the vendor, he being the other director whose conduct was also to be discussed), and outvoted the meeting that the reporters should remain. As this would have been to prevent the shareholders being fully informed I am pleased, for the honour of Journalism, to say that both those gentlemen declined to be parties to such a proceeding, and, recognising the real vote of the room, kindly put up their note-books and left.

My statement was then placed before the shareholders, in which I contended that their directors should be removed, that the company was profitable principally to the secretary and solicitor, that the person referred to by the directors as "the agent at the mine" was dismissed long since, having been found untrustworthy, and that the balance-sheet and report were not true in their statements; and I concluded with the amendment stated in your last issue, calling for a committee to investigate the whole matter. Whether I had proved my allegations is, to my mind, sufficiently answered by the facts that no one attempted to controvert them, and that the shareholders present supported me by so large a majority that I believe there were only five hands held up against the committee being appointed; these were Mr. Ellison (director), the secretary, the solicitor, the so-called "agent at the mine," and one shareholder, whose name I do not know. In the face of this strong expression of opinion Mr. Ellison and his friends again unblushingly produced the "proxies,"

and defeated the amendment in spite of the strongest remonstrances of the shareholders, and adopted the report and balance-sheet without condescending to even attempt to explain the alleged untruths therein. And now a report is coolly inserted in the Journal that "this amendment on being put to the meeting was lost by a large majority," and no indication given that it was only defeated by what was strongly objected to in the room as an abuse of the proxy system.

The following items of the proceedings were carried on in the same manner, by weight of proxies only.

As this letter has run to a greater length than I anticipated I will (if you will allow me) publish my repudiation of that balance-sheet and report, to which my name has been attached, in a separate communication.—*Mecklenburg-square, Nov. 21.* A. J. GATE.

THE GRIFFIN SILVER-LEAD MINING COMPANY.

SIR,—What is called a balance-sheet and report of the directors of this company has been printed and issued with my name attached, and is reported in the Journal of last week to have been adopted by a large majority. In another letter will be found an explanation of the devices by which it was carried. In this I wish to publicly repudiate all connection with or responsibility for both balance-sheet and report, which I maintain to be inaccurate, misleading, and untrue. The report was prepared and issued without my knowledge, and I was neither consulted about it nor saw a word of it until after it was printed and sent out, with my name thereon as one of the directors, whose report it was.

The two following items will serve as instances of what I maintain to be untrue:—Firstly, in the report is a special statement that "within the last few weeks your mines have been carefully examined by Mr. Henry Maudslay." I have no hesitation whatever in saying that Mr. Maudslay could not possibly have carefully examined the mines, as they have been idle for over twelve months, and are full of water.—Secondly, in the income and expenditure account the first item of expenditure is said to be for "wages, stores, &c., for driving levels and sinking shafts," &c. The mine has been stopped during the whole time covered by the accounts, and not a fathom of either level or shaft executed.

As the directors have chosen to force this report upon their shareholders, and voted it (by proxies) in defiance of those present, and published a report which entirely suppresses the fact that these misstatements were strongly objected to at the meeting, I have felt obliged to publish this statement, and request Messrs. Ellison, Davies, Makepeace, and Co. to publicly explain their report and prove its truth, if they can. That it is their report and not mine is what I wish to clearly convey to your readers. I had no part in preparing it, and entirely repudiate it as it has been prepared. Mecklenburg-square, Nov. 21. A. J. GATE.

THE GRIFFIN MINE.

SIR,—My attention has been called to what purports to be a report of the meeting of this company last week. It certainly is not a full report, and I do not consider it a fair one. The total omission of any specific account of the charges brought by Mr. Gate (one of the directors) against others connected with the company, and the suppression of the fact that all the resolutions were carried by proxies, and in direct opposition to the votes of the majority present, put a very different appearance on the report to what a full account would have put. I specially object to the concealment of the identity of the various parties mentioned. The names of the secretary and solicitor (as such) are nowhere specified, but having stated that Mr. Gate had attacked those two persons, the report goes on to say that an amendment that Mr. Gate be not re-elected (as a director) was put by "Mr. Chapman," and seconded by "Mr. R. Makepeace," of course conveying the impression to readers that these were two gentlemen present as ordinary shareholders, but Mr. Chapman is only another name for the "Solicitor" and Mr. R. Makepeace for the "Secretary." And as one present throughout the proceedings, I do not believe two non-official shareholders could have been found in the room to have moved and seconded such an amendment. A SHAREHOLDER.

THE MINING INTEREST—THE METAL TRADE.

SIR,—The advance in metals, especially copper and tin, should impart confidence and hope, that the unsatisfactory and prolonged depression in mining property is at last to be succeeded by better times. The advance has been steady, persistent, and upon sound principles, and is therefore likely to be permanent; when the scales are upon an even beam a very little will turn them, so with many mining ventures an advance in the price of the metal produced means a transmutation from calls to a cessation of calls, and in many cases to dividends, hence all those interested in mines should take courage by the outlook. There has been a good deal of writing about the advantages and disadvantages of Cost-book and Limited management until people are fairly sick of the whole thing. There have been dragons conjured up before the imagination of the timid, which I suppose have been effective in reducing the value of stocks to the benefit of those who were probably short of stocks, or bears in stocks, and who have now taken them in at a good profit. A man who remains a bear in the market now has more obstinacy than discretion, and will soon have less money than is good for his credit. There are risks in all business, and business men must take these risks, and look after their own affairs at the proper time, for business will not look after itself. If you are associated with good men and attend the meetings, the Cost-book system appears to be the most advantageous. If you have a large capital and honest direction the Limited system is not to be derided, but in both cases it is most essential that the effort is expended upon a good mine. These discussionists upon the demerits or merits of these two systems have had a great deal to do with destroying confidence in mining the past year. Let us wish success to both, and better times for all. Confidence is credit, and credit is capital. Cut down one you pull down the other. It is easier to destroy than build up. Let us bury the hatchet, and go to work in the good times coming. UNCLE SAM.

THE COST-BOOK SYSTEM.

SIR,—Men who are ashamed to subscribe their names to their published letters are in all probability shameful men, like "Wide Awake," in the Journal of the 12th inst. The case which I gave of the experience of a lady investor in Frank Mills Mine should operate as a warning to investors in speculative mines worked on the Cost-book Principle. That lady invested 100*l.* in that mine, and about two months ago (not 20 years, as one of your correspondents supposes) she was called upon by the officials of the Stannary Court to pay 1000*l.* to cover the debts of her co-adventurers. Holders of shares in prosperous mines are safe, but not in mines where debts are incurred, the extent of which is often unknown to the company. I might mention many cases where merchants have sued solvent shareholders to recover amounts due from an insolvent Cost-book company. In Limited companies you know your position and are safe. Truro, Nov. 21. R. SYMONS.

A SOUND INVESTMENT—TIN AND PICKLES.

SIR,—Your readers may do worse than invest some money in a concern which has been brought out this week, and will probably be mentioned in your current number. Tin-plate is the principal material employed, and the article produced is cheap, beautiful, and perfect in its simplicity and practical efficiency. I have made inquiry as to cost and profits, and advise your readers to call at the offices, 5, Copthall Buildings, and see the article, when they will be convinced of its value at once. The salient features are—1. The probability of the foreign patents selling for much more than the whole capital of the company. 2. The prospects of dividends far beyond the average. If the company should only do one-fourth of the English pickle trade—i.e., export and home use—it will pay dividends of more than cent. per cent. per annum. As a proof of the character of the enterprise, it is sufficient to state that the friends and supporters of the company have subscribed the money to establish it, without calling upon the public to take a single share. There are neither "promotion" profits nor formation expenses—save the small sum necessary to register the company, &c.; and from

appearances those who take shares in it will have the exceptional gratification of holding their shares free of cost, and of having large yearly dividends. — STANNUM.

PERRAN IRON MINES.

SIR,—I see that a company has been formed to work these mines named the Newquay Mining Company. It appears from the company's prospectus that the Duchy Peru sett is not included now in the property, although it has been worked in conjunction with this group of mines by former lessees. The Duchy Mine is now a great success, and regular monthly sales of blende are being made from it, and it also contains one or more head lodes. The Deer Park Mine has, however, been added to the Newquay Company's purchase, and is, without doubt, a most encouraging speculation. Besides the iron lode in this mine there are three well defined lead lodes discovered, from one of which several parcels of lead was returned by the late owners (Messrs. Barton and Parkyn) at a depth of some 8 fms. from surface only, at one place where one of the lead lodes crosses the iron lode, the latter (which at this point is about 10 fms. wide) is impregnated with lead throughout, and would, I should think, pay for dressing. I fully endorse Capt. Retallack's opinion, expressed at the company's last meeting, that this mine will ere long turn out another West Chiverton if properly developed; and I am glad to see this gentleman's name on the directorate, as his special knowledge of the district cannot fail to be of great service to the company. The belief that this so-called iron lode is simply the back or gossan of a lead or copper lode is shared by many, and the lead-bearing nature of the ground in the district lends additional proof to this idea; although we must not forget that at the Duchy Peru the iron has been proved about 70 fms. deep; but if in depth it should give place to either lead or copper lodes, the results will no doubt be good, from the fact of having such a rich gossan overlying them. The royalty extends for about four miles on the course of the lode, commencing at Gravel Hill in Perran Bay to the Deer Park Mine, which is situated on the northern boundary of the Old Shepherds. —Nov. 24. CAVENDO TUTUS.

WEST CREBOR.

SIR,—It is not generally known that this mine is situated between Wheal Crebor and the Bedford United Mines. A steam-engine has been erected, pitwork and machinery on the spot, and all paid for. Shaft sunk to the 30, and driving has commenced on the Champion lode of the Tavistock district, from which so many thousands of tons of copper ore has been raised and sold, and such continuous profits made. Good stones of ore are already reported on the lode. Any day this lode may prove rich as Crebor or Bedford United, yet the shares in West Crebor stand at a mere nominal price in the market. A hint to the wise is sufficient. "Buy them," for a great discovery is imminent. —Tavistock, Nov. 23. ARGUS.

WHEAL MARY ANN AND TRELAWEY DISTRICT.

SIR,—A very valuable lode has been discovered about 6 ft. wide, composed of a rich looking gossan, worth 10½ ozs. of silver per ton—congenial friable spar, chlorite, mundaie, and silver-lead. The lode has an underlay of about 2 ft. in a fathom east, and can be developed by a deep adit driven on its course, and water power available for deeper workings, dressing, and crushing the ore. The property I believe may now be obtained upon reasonable terms for mining purposes. —Nov. 22. MINER.

THE GWENNAP DISTRICT.

SIR,—The Cathedral Consols Mine has not yet made its mark, but there are certain indications that it will soon come to the front. Several months ago an accident happened by which a new lode of large size was discovered, the whole of it having been removed by former explorers. Here a powerful engine has been erected, and two deep shafts completed. As this district is the most productive of copper (according to the authority of the late Mr. Jory Henwood) in the county of Cornwall, the shareholders may look forward to be indulged with the valuable remarks of some of the old tributers in the neighbourhood, who are the only authorities worth having in such matters. —Exeter, Nov. 23. AN INTERESTED SHAREHOLDER.

NEWTON ST. AGNES.

SIR,—There are two large dykes of inferior limestone cropping out at the east end of this parish on each side of our rich manganese lode, which might prove of commercial value to some of our farmers. I should be glad to be informed whether or not this useful article could be pulverised and employed as a manure, like the well known Bude sand, which an old friend of mine who lives near the spot says "You cannot use to much of." It must be mentioned that several years ago a small kiln was erected, which failed to burn the stone effectually. —Nov. 24. E. T. MAY, Vicar.

NEWLYN UNITED MINES.

SIR,—Anonymous correspondents are unworthy of notice, but I wish to say a few words in reply to "A. B. C." whose letter appeared in the Journal of Saturday last. My letter of the previous week contained no reference to the Cost-book System, nor to the publication of a prospectus of these mines. I know nothing at all about it; but, in speaking of Newlyn district, I adverted to these mines as presenting good prospects of success. Mine agents of the district say that the recent discoveries make the mine worth about 30,000l. I know nothing of the company nor anything in relation to the proprietors, and, therefore, the ill-timed sneer indulged in by "A. B. C." is unjustifiable, and show him to be a bad man. —R. SYMONS, Truro, Nov. 24.

LADY ANN SILVER-LEAD MINES.

SIR,—While so many millions of British capital have been lavishly subscribed, and I may say squandered, in the promotion of unprofitable mining schemes abroad, so far distant as to be out of the power of the bulk of the investors to verify the blatant reports of the projectors, really bona fide, good, and safe properties at home, and within the scope of everyone to see and judge for themselves, seem to be altogether neglected. Just such a property seems to be the Lady Ann Silver-Lead Mines, in North Wales, which in a short space of time will be certain to make a noise in the mining world, and will probably long before Indian gold mines are making any returns be not only paying its own cost, but will be putting handsome dividends into its proprietors' pockets. Being situated in a district widely known for its enormous mineral deposits, and surrounded by mines that for many years have been yielding immense amounts of wealth, with rich and productive lodes running through it, that within its boundaries are entirely unworked, under the present judicious management it cannot fail of becoming a most profitable investment. The workings are being pushed on with vigour, so as to thoroughly open up and develop the various lodes, four shafts being sunk some 50 to 60 yards in depth, cross-cuts and levels being driven on the several courses, from which good yields of lead ore, rich for silver, is being obtained every day, and of which they have a good "boose" at surface nearly ready for market. At the last meeting of directors there was a special report from the agent at the mine read relating to indications of a change in the Westminster lode, which were thought to be most important, as evincing symptoms of an approaching great discovery. Taking it altogether, it is a property that intending investors would do well to pay every attention to, and if possible secure an interest in while it is to be obtained. —H. W.

EAST CARADON.—The winze below the 60, west of Fawcett's lode, which for the whole of the sinking has been worth 3 tons of copper ore per fathom, has now been communicated with the 70; stopes will be set forthwith. Another winze sinking below the 70 will soon lay open further ground for stoping. In the 150 east driving on the South Caradon caunter they have a very promising lode producing good stones of ore. At the 175 a cross-cut is being driven south, and they expect in about 6 fms. to intersect below the elvan the caunter lode of South Caradon, and also to meet with the north part of

Child's lode. Other points of interest are the 60 east and the 90 west, both on Fawcett's lode.

OUR GOLD SUPPLY—ITS EFFECTS ON FINANCE, TRADE, COMMERCE, AND INDUSTRIES—No. IX.

By THOMAS CORNISH, Mining Engineer (late of Australia).

Author of "Gold Mining, Its Results and Its Requirements."

The production of gold in the Australian colonies affords ample testimony of the cause of their remarkable progress in wealth and population, and its importance to the financial, commercial, and manufacturing interests of Great Britain.

It was in consequence of the enormous production of gold or new purchasing power that has developed such an extensive and profitable trade between Great Britain and Australia, and opened up such unlimited areas of magnificent country for settlement, and the colonies in a few years must, as a natural consequence, become a great, wealthy, and powerful nation. As the mineral resources of each of the colonies become better known and more systematically worked, the results of the operations must be of a most favourable nature. Gold mining creates more wealth and develops more industries than that of any other occupation or employment, and becomes of greater benefit to the bulk of the population than does the development of any other class of industries. The legitimate development of mining and the permanent increase of the supply of gold is of the highest importance to the welfare of England, as by an increased production of bullion financial operations can be extended, commerce is stimulated, trade and manufactures of all descriptions becomes materially benefited, and the value of labour permanently maintained.

With a judicious combination of capital and organisation of mining labour there is ample auriferous country opened up and proved payable in Australia and New Zealand that would give profitable employment to upwards of 100,000 extra miners beyond what are now employed in those colonies, and thereby increase the annual yield of gold to an amount from 10 to 20 millions sterling, the greater portion of which would naturally permeate throughout the channels of trade and commerce in Great Britain, thereby conferring benefits in the future as it has done in the past on this nation.

My object in writing this work has been to put in a plain manner my views on the special value of gold before the public, to give proofs of the resources from whence the great supply of gold has been obtained during the last 30 years, and to practically illustrate as far as possible what the probable results of gold mining may, and ought to, be if the industry be followed up with the spirit of enterprise that it merits.

I wish it particularly to be borne in mind that investment in legitimate gold mining is a very different thing from gambling transaction in mining shares by making wild investments in ridiculously high-priced stocks, which in so many cases bring loss and disappointment to those who have been allured into investments on the faith of highly coloured reports.

The excitement of a mining mania such as lately in vogue for investment in prospective ventures in India, Africa, and other countries, is seldom conducive to the legitimate development of mining. So much capital becomes invested in high priced and inflated stocks at the outset of an undertaking and in the promotion of companies by overloading them with capital not put to a productive purpose, that it is scarcely probable that many of the mines can pay interest on such large sums of money as have been paid on premiums for the privilege of searching for the precious metal.

Shareholders in mining companies are too often imbued with expectations of the most sanguine nature anticipating the receipt of dividends before a mine has been opened up, and are apt to express dissatisfaction with managers and directors for not doing more work or producing more satisfactory results from what has been done.

The opening up of a mine through its various progressive stages of shaft sinking, tunnelling, or driving at various levels, cross-cutting, putting up rises preparatory for stoping, prospecting for lodes or auriferous washes, the erection of machinery and appliances, takes up more time, labour, and capital than many people imagine. It is not a question of weeks or months, but very often a matter of years before the shareholders receive any return for their outlay. In the early days of gold mining when rich discoveries were made close to the surface or with a few feet sinking, and only manual labour and the most primitive appliances were used for washing and separating purposes, the returns were sometimes immediate. Some of the most successful gold mines in Victoria were working for many years before getting gold, many of them varying from five to ten years, and some have been in operation much longer without ever paying a dividend, and costing fabulous sums for labour, machinery, timber, &c.

It is, therefore, essential that investors in gold mining should be prepared to wait patiently for the efficient development of a mine before anticipating to receive any returns in the shape of dividends, nor should the prospects of a mine be condemned as unfavourable merely because its practical development requires more time and capital than first anticipated.

It is one of the anomalies of mining that credit for wisdom and sound judgment goes with success. Thus the managers and directors of a successful mine oftentimes gain great "kudos" because they have been lucky in opening a rich mine, while on the other hand, men who have to exercise great judgment and careful supervision to make a poor mine pay expenses, get neither thanks nor credit. It does not require superior intelligence to work a rich mine and make it pay, but it requires good judgment, ability, and economical management to work a poor mine to advantage. There is more credit to the management that makes a mine profitable when the stone or wash dirt only averages a few pennyweights per ton than there is when it averages ounces. It may be often found that the richest mines have been badly managed, their richness hiding all defects of imperfect supervision or ignorance in management.

The valuation of gold mining properties is not only a most important matter in mining investment, but is one that has never been sufficiently considered. It is of a most difficult nature to deal with, as all calculations have to be based upon probabilities of results. Nothing definite can be known except by actual yields. The value of mining properties can, however, be appraised by any one competent to form an opinion, the same as any other properties, at any rate in such a way as to avoid the rushing of shares to ridiculous and fabulous prices. Thus, taking a mine well opened, giving a steady average yield, with a good sized area of ground as a claim, is not worth more than three, four, or five years' purchase, except under special or exceptional circumstances. I place that as the limit to the value of gold mining property, because mines vary so much in their yield, and are subject to such changes that the investor is not warranted in giving a longer term of purchase than three, four, or five years, he being fairly entitled to the changes for the better, as he is likely to meet with changes for the worse. Although a gold mine might be well opened, and so far prospectively developed as in all human foresight to show several years' work beforehand, it is impossible to say with certainty what the yields may be; it can only be surmised and judged of from practical observation and experience. The value of a mining property may be estimated merely as a prospective value based upon surrounding circumstances, which can only be adjudged by those who have a practical knowledge of the subject. A productive mine may be worth only a few months' or a few years' purchase. In the wild excitement of share-dealing or the floating of new companies, and by the manipulation of the share market by interested persons, stock and shares are often rushed up to ten, fifteen, or twenty years' purchase. That, of course, is pure gambling; it is not legitimate speculation or investment.

Managers, directors, shareholders, and experienced miners oftentimes get wedded to or infatuated with a mine they are particularly interested in, the delusion frequently overriding their common sense judgment. The valuation of progressive mines can only be estimated by their prospective advantages from surrounding indications, which local knowledge and practical experience can best determine. It is not advisable to pay too highly for interests in prospective or progressive mines, as all mines are subject to so many drawbacks and disappointments; some which may be considered moral certainties

ultimately prove great failures, while others, looked at with indifference, prove to be highly successful. "The proof of the mine is in its practical results."

There can be no absolute standard of valuing progressive mines; that must be left to peoples' fancies, private knowledge, or judgment. The main questions to consider are—Has the company a good-sized area of ground to make a mine? Does it stand a fair chance of the "lead or lode"? Is it purely a new lead or lode they are prospecting for? What may be considered its chances of success can only be derived from practical experience and local knowledge.

Gold mining, or the production of new wealth, is the barometer of all other interests, trades, and callings. When that industry is prosperously and vigorously prosecuted, then all other interests are regulated by its success, and as naturally as night and day follow each other so will the general success and prosperity of other industries be subject to the influences of gold, which unlike most other forms of wealth can only be produced by mining. I can but trust that the views put forward in this work on the practical development of the auriferous resources of Australia and New Zealand, and the important authentic information here collated, will be the means of disseminating information on a subject that has not heretofore received such consideration as it deserved.

The discovery of the Indian gold fields, and the favourable reports from so many authorities, including Mr. R. Brough Smyth, F.G.S., who for so many years occupied the position of Secretary of Mines in Victoria, and Mr. C. J. Harvey, M.E., and others, will no doubt give great impetus to the development of gold mining in India, and materially increase the gold supply, while other countries known to be auriferous will make efforts to develop their golden deposits.

In the development of new gold fields whether in India, South or West Africa, or in South or North America, it all tends to the extension of trade and commerce, the opening of new fields for labour and capital, the settlement of population, and the profitable remuneration of many who, but for the development of gold mining industry, would have but small hopes of improving their position. The legitimate development of the gold mining industry in any part of the world is a matter worthy of the earnest attention of the Governments of the countries in which it may be found, as also to the financial, commercial, and industrial population of those countries most directly affected by its results, and the distribution of a newly found wealth in the form of gold currency.

It is not my province here to enter into any speculative theories in reference to the value of gold as a currency, or as to what countries have already adopted it, or likely to do so, as the chief basis of financial operations. To illustrate the special advantages of the production of gold it is enough to state that it is a special form of wealth that all classes of people are striving to obtain individually, and all civilised nations are desirous of accumulating collectively. There is no doubt that most nations will as soon as possible establish gold as a currency or chief medium of exchange whereby to regulate their financial operations and value of other forms of wealth. To do this it will be essential that the supply of gold should be materially increased and steadily maintained to meet the demands and necessities of nations, financial institutions, trade, commerce, and industry, and generally to supply the wants of a rapidly increasing population. Therefore it stands to reason, as gold can be produced or its quantity increased by no other process but that of gold mining, that the industry which raises this new purchasing power from the earth should receive the highest consideration and attention from all classes of the community.

The permanent maintenance of an annual gold supply for the requirements of finance, trade, and commerce can be best secured in Australia and New Zealand by a judicious combination of capital and labour, each controlling itself while working in unison under intelligent supervision and direction, thereby preventing the great waste which has hitherto taken place. In the earliest days of the gold fields discoveries the precious metal was found oftentimes on the surface soil, or within a few feet of the surface, in enormous quantities, and obtained by washing or crushing with the most primitive appliances, but now the auriferous country has been so much prospected that the principal portion of the shallow alluvial gold fields have been worked over, leaving now chiefly the deep alluvial leads and quartz reefs for future workings. It is in the inexhaustible treasures of the latter the attention of gold mining investors and miners must be chiefly given. When by the introduction and more general use of efficient appliances and machinery, and an economical and intelligent supervision of labour, that from the known gold fields of the British colonies a constant and increasing supply of bullion can be maintained to meet the requirements of finance, trade, and commerce, as also the ever increasing population of Great Britain and her colonies. My object in writing these papers has been to draw special attention to the gold mining interest, and to show its special value to the aid and progress of all other industries, trades, or callings, as also to the general prosperity of individuals as well as nations. If my efforts shall in any way assist in advancing the permanent prosperity of the mining interest, and a more profitable increase of the production of gold, I shall be satisfied of having written it to some purpose. I trust that my remarks on "Our Gold Supply, and its Effects on Finance, Trade, Commerce, and Industries" have been of some little interest to your numerous readers, and thank you for their publication.

FOREIGN MINING AND METALLURGY.

The news forthcoming with respect to the Belgian iron is rather scanty, but is at the same time generally satisfactory. The various descriptions of iron are well maintained, and employment appears to be assured for more than six months to come—a state of things which has not prevailed for a long time. The season is now well advanced, and it is especially encouraging to Belgian ironmasters to find their products in request at a time of the year when they are generally looking out rather anxiously for orders. Belgian industrial are, however, pursuing a prudent policy, and notwithstanding the activity observable in business they have not made any advance in prices. The Northern of France Railway Company has let a contract for 350 trucks to the Rolin Works. An official report states that 20 blast-furnaces were in activity in the Hainaut last year, while there were 19 out of blast. The number of workmen employed was 1820, and 384,530 tons of pig were made. This production showed an increase of 120,003 tons, as compared with 1879. The number of ironworks in activity in the Hainaut last year was 29, and the production of iron was 304,778 tons.

In the French iron trade quotations appear to be still moving upwards. At Paris iron has advanced from 8l. to 8l. 4s. per ton. The Chatillon and Commentry Forges Company has secured a contract for 150 tons of iron wire at 16l. 14s. 6d. per ton, and 17l. 0s. 4d. per ton for iron of a thinner description. The German iron trade has maintained a satisfactory tone, and has left little to be desired. Pig has been well maintained upon the German markets, and the proprietors of blast furnaces having less to fear as regards English competition, appear disposed to make some advance in prices. Employment is general in the German metallurgical establishments. This is especially the case with the steelworks, which have secured fresh orders of late. In the German coal trade there are some complaints as to scarcity of rolling stock. The demand for domestic qualities of German coal appear to be increasing from day to day; industrial coal is also in no less request. The German North Sea ports have again begun to consume English coal in considerable quantities in consequence of the impossibility of procuring German coal. A scarcity of rolling stock has been experienced in Upper Silesia as well as in Westphalia, and also in the districts of Saxony and Brunswick, in which lignite is worked.

The condition of the Belgian coal trade continues favourable, and in all the producing districts of Belgium there appears to be a feeling of satisfaction as to the course of affairs. All the collieries are well employed, and they even experience difficulty in meeting the demand upon their productive resources. Since German coal has advanced in price it is noticed that there has been an increased demand for Belgian coal. This has especially been the case at Antwerp, where German coal had acquired a formidable footing. All the collieries of the Hainaut are overdone with work, and a similar

state of affairs has been noticed in the Liège district. Coal quotations have been generally firmly maintained in Belgium; coking coal has rather advanced than otherwise. It is difficult to indicate the price of coke, as it is scarcely obtainable; in cases in which prompt delivery is required very high rates have to be paid. The chorus of general satisfaction which is now heard among Belgian coalowners is not disturbed by complaints as to scarcity of railway rolling stock; this is certainly something wonderful. The production of coal in the Hainaut last year is officially returned at 12,548,507 tons, showing an increase of 1,099,976 tons as compared with 1879. The average sale price was slightly higher last year, but it still remained very low. The average wages paid to each working miner in the Hainaut presented an increase of 4s. 10s. last year. The average in 1880 was 36s. 13s. 8d. per man.

SOUTH AUSTRALIA.

[FROM OUR OWN CORRESPONDENT.]

The development of our gold reefs seems likely to go on satisfactorily if we may judge by the eagerness of the public to invest in the companies which are being brought forward. Two mines—one at the Mount Pleasant district (known as the German Reef), and one near Echunga—are crushing quartz, with an almost certainty of securing payable results. Some very good discoveries have been made lately, showing that gold mining is likely to become an established industry in the colony. On the old gold fields, where years ago the precious metal was simply washed out of the soil, several reefs are now being worked with a prospect of permanent mining being carried on. It is intended to import diamond drills to test the reefs at great depths, and it is anticipated that this plan will lead to important discoveries being made. The steady rise in copper has had the effect of encouraging those interested in mining for that metal, and some new mines are said to be likely to be brought out if the market continues firm. The most important news in mining matters comes from the Northern Territory (Port Darwin), where a discovery of gold and tin together, of great richness, is said to have been made. I am not at present in possession of full particulars, but hope to send them next week by the s.s. Potosi, of the Orient line. In the meantime rumour states that over a considerable tract of country stream tin has been found worth from 40 to 60 per cent. of pure metal, and containing also 40 ozs. of fine gold to the ton. It is said that those parties who were fortunate enough to secure the information lodged claims with the Government for leases to work minerals on 150 square miles of country. If this be true it is quite likely that much of the ground will have been taken up at random, and contain little or none of the valuable metals referred to. I think in a recent letter I mentioned a discovery of nickel near Beltana, about 150 miles north of Port Augusta. Discoveries of antimony and silver have also been lately brought under my notice.

Meetings of Public Companies.

DEVON GREAT CONSOLS COMPANY.

The ordinary general meeting of shareholders was held at the company's offices, Austinfrs, on Thursday.

Mr. PETER WATSON in the chair.

Mr. W. H. ALLEN (the secretary) read the notice convening the meeting, and the statement of accounts for the six months ended Oct. 31 and report of the directors were submitted.

The directors have to report that the sales of copper ore for the six months, from April 21 to September 22 (inclusive), amounting to 4905 tons 13 cwt. 2 qrs., realised the very low sum of 8663s. or an average price of only 17s. 11d. per ton. For the corresponding period of last year, April to September, 1880, the quantity of copper ore sold was 4854 tons 2 cwt. 1 qr., realising 12,846s. 11s. 2d., or at the rate of 26s. 12s. 3d. per ton, the difference being 17s. 4d. per ton less, and in money value 4250s. likewise less. This has been caused not only by a lower produce of the ores but the low price paid by the smelters, owing to the continued depression in the copper trade. The receipts for the sales of arsenic have been 10,087s. 8s. 3d., which is also considerably less than the two previous half-years. The alterations and stoppages at the works, together with the severe winter, and since then the storms of wind and rain, have materially interfered with the manufacture of arsenic. Satisfactory progress is, however, now being made at the reduction works. The receipts, it will be observed, are for six months, whilst the expenditure embraces a period of seven months (28 weeks). This is owing to the system adopted of having thirteen (4 weeks) monthly pay-days, and the thirteenth, or extra month's cost, amounting to about 3000s., become payable only the day before the closing of the accounts now submitted.

The expenditure for the seven months shows an increase of some 2400s. over that of the corresponding seven months of 1880, the principal amount of increase being about 1400s. in payments on the mine account for timber, iron, coals, &c., in all of which advanced prices have had to be paid. There was likewise a further considerable increase in the amount of labour, wages, &c. The royalty paid to His Grace the Duke of Bedford, K.G., for the six months on copper ores and arsenic amounts to 1116s. 14s. The sum of 208s. 5s. has been paid for staves, and there is now on the way from Norway another large cargo of excellent staves, secured some time ago by the directors at a considerable reduction in price as compared with what had formerly been paid.

The shareholders will have observed for the last six months, by the monthly public tickings in Cornwall, the extremely low prices realised for this company's ores, which has greatly militated against the state of finances now submitted. Whilst the foregoing statement of receipts and expenditure is not what the directors would desire, they hope and believe that the next six months accounts will show an improved state of affairs, especially if the rise in the price of copper which has recently taken place continues. After the payments of the heavy expenditure alluded to, and of the exceedingly low sales of copper ores and arsenic, the statement of accounts, made up to Oct. 31, shows a credit balance of 3037s. 11s. 4d.

Notwithstanding the great outlay already made in the purchase and erection of rock-boring machinery, &c., and in view of the continued hardness of the ground, it would be most desirable to purchase a much larger rock-boring plant to drive the levels more expeditiously, and thus lay open increased reserves of copper ore ground and mande (arsenic). It will have been observed by the reports of the agents, published weekly, the extension of several levels has not opened out so productive in ore ground, but according to the manager's half-yearly report he considers "that our prospects continue very encouraging."

The CHAIRMAN said: Gentlemen, we meet you on the present occasion at the half-yearly meeting, with a somewhat different statement of affairs to what we had anticipated during the past six months; but what has occurred is entirely unavoidable—that is to say, it has been beyond the control of the directors who have had the management of your affairs during that period. The accounts will show you that we have sold for the half-year 4955 tons of copper ore, which have realised an average price 17s. 11s. 11d. per ton, or in money value the very low sum of 8663s., against 4854 tons, which realised 27s. 12s. 3d. per ton, or a money value of 12,846s. in the corresponding period of last year. Therefore, it has realised 17s. 4d. per ton less in the past six months, and in money value 4250s. less against the company. That has arisen, as the report tells you, partly owing to the lower produce, but more particularly from the very low price which the smelters have given the company for ores during that period. I shall have something more to say on that point further on. As regards the arsenic receipts they have been 10,087s., which is also considerably less than in the two previous half-years. This has arisen, as you were told at the May meeting, owing to the very severe winter which we had, and which has greatly militated against the interests of the company in getting arsenic returns, for it is impossible to open out our chambers of arsenic when winds and rain prevail. But our returns now, I am happy to say, are satisfactory, and we hope they will continue satisfactory during the next six months. (Hear, hear.) As you are aware, according to the 13 months' system, the 13th month of pay comes into these accounts; in other words, we have six months receipts against seven months' costs, which has augmented the costs against us to the tune of from 3000s. to 3300s. The expenses have been very considerable during the past seven months, showing an increase of some 2400s. over the corresponding period of last year, and also the preceding six months.

It has arisen principally from an increase of about 1400s. in payment of timber, iron, and coals, &c., and also for the increased price of wages which we have had to pay. All these matters are beyond the control of the directors, and we have had to pay a more satisfactory statement. We have paid in royalty for the six months, on copper ores and arsenic, the sum of 1116s., to His Grace the Duke of Bedford; and we have paid 208s. 5s. for staves, and we have a large cargo of staves now on the way from Norway, which will last for some considerable period. The shareholders will not be surprised at this state of affairs as far as our copper sales are concerned, as you will have seen in the mining papers, from month to month, the sales of ore which have been realised, and these have been very small. The total sales, as I have said, for the six months, have been 4955 tons, which realised 8663s., or an average of only 17s. 11s. 11d. per ton, as against 27s. 12s. 3d. per ton in the corresponding period of last year, being 4350s. less to the credit of copper ore, which is a very serious item indeed. I only speak my firm and positive conviction when I say that the smelters have been a great grievance to this company for a long period. My predecessor, Mr. Thomas, continually told you of the prices which the smelters paid to this company, but we are most certainly de-

serving of better treatment, more especially considering our previous sales of copper ore to the smelters, which must have amounted to three or four millions sterling since the commencement of the company. (Hear, hear.) During the past half-year we have not been treated well, but very badly, by the smelters. Since the accounts were made up we have had two more sales of copper ore. Captain Richards was there at the Public Ticketing, on Thursday last—and also the captains of Marke Valley and one or two other mines, and they had something to say with regard to the very low price which the smelters gave us. We realised 1830s. by those sales, and Capt. Richards and all our agents, and Mr. Bowden and myself and the directors, considered we should have received 2000s. to 2100s. at least. Copper went up, and sold better, and, as I have said, we were thinking we should get from 2050s. to 2100s., and we were surprised to find we only got 1830s.; in other words, from 200s. to 300s. less than we expected. The Cape Copper Company have started their own smelting works a long time ago, and they have been gradually augmenting their furnaces, and are doing so now. I say emphatically that if Devon Great Consols is to do any good for the owner and a better place for copper ore the better. (Cheers.) Notwithstanding these adverse matters to which I have alluded we have a credit balance of 3037s. 11s. 4d., but this does not include the last two sales of copper which have been sold, one of which on Oct. 20 realised 1622s., and the other on Nov. 17 1830s., to which I have alluded. We have paid another cost up to today, and we have a little better balance for you than that which appears in the published accounts. There is a point, to which the report alludes, with respect to rock boring machinery. Our ground, as you are aware, is very hard indeed, and on that point I would draw your attention to the fact, that in addition to the dividends which have been regularly paid, and I am sorry we cannot give you one to-day—I would draw your attention to the fact that, in addition to the dividends, we have expended in rock-drills, the labour connected with them, the sinking of Watson's engine-shaft (which is a new work), in putting down pumps, in castings, in angle-bobs at the western mine, also further outlay on re-timbering, and in securing the large plunger at Wheel Josiah, and further outlay at the reduction works in re-building flues and condensers, repairing furnaces, repairing damages by storms—on these things we have expended 5595s. 19s. 3d. Here is the accounts, which I have had made out, and this amount has been paid out of the revenue, and of course has added considerably to the value of the property with regard to the future. (Cheers.) Capt. Richards is here, and also Mr. Bowden, and they will answer any questions which any shareholder may wish to ask. I would allude to the sinking of Watson's shaft; Capt. Richards will be able to tell you that things there are looking very favourably indeed; and not only with respect to Watson's shaft, but also with respect to the western shaft which we have commenced, and we have come upon good stuff. Owing to the recent rains we have not been able to do much lately, but we hope we shall be able to go on again shortly. Again, in the 17s. going west, parallel to the large bunches of ore we had in former times, we are looking more promising there. I cannot say more to you with respect to it. These are the facts of the case, and we cannot alter them. I am sorry the result is not more favourable; at the same time, looking to the future, I think there is a very bright—well, perhaps, I should be expressing a sanguine feeling by using the word "bright," but, at any rate, we have a very good future according to what our agents tell us. In developing the ground going east and west there is one thing I will point out to you. In the last 12 months, although we have added considerably to the plant and so forth, owing to the rise in the price of machinery, iron, &c., if it were realised now it would realise the amount which we have lost during the last six months or more. I only hope the next six months will show, as I believe it will, a very different set of accounts to that which we place before you at the present time. (Cheers.) I shall be very happy to hear any question, which I, or Capt. Richards, or Mr. Bowden, or the directors will answer. I move that the report of the directors now submitted, the statement of receipts and expenditure, and Capt. Richards's report on the mine, which has been circulated amongst the shareholders, be received and adopted, and entered upon the minutes. Before I sit down I may state that the directors were on the mine last Thursday, and from what we gathered we were certainly pleased with regard to the future. Since my return, on Friday, I have been confined to my bed with a bad cold, which is of old standing but I am very glad to be here under the circumstances, and stand up before you and express what I feel regarding the financial state of the company, and the property generally. (Cheers.)

Mr. H. C. STEWART seconded the motion.

Mr. COLE asked for an explanation of the railway expenditure—379s. Was it for carriage of material, or what was it for?—Mr. MOSES BAWDEN said the company had a private railway from the mine to the place where the ores were embarked. The accounts were dissected, and the amount mentioned by Mr. Cole was the portion which belonged to the railway.

Mr. COLE said he thought the remuneration paid, considering there were only three directors besides the managing director, was somewhat large.—Mr. J. C. WILKINSON expressed a similar opinion.

Mr. PIGOTT expressed the hope that every effort would be made to keep down the expenses at the mines as much as possible. If they could not get a better price for the copper they had better not take it out of the mine.

Mr. H. O. CATTLEY said that these were trifling matters in comparison with the important and vital question as to whether they were getting a fair and proper amount for the produce. He had in plain and emphatic language urged on the board that the price obtained for the copper was disgracefully low, and that they should take measures to get a better price. This was a far more important question than the trifling matters of the company. He would ask the directors whether they were taking any steps whatever to form a means by which the company could smelt their own copper, for with the present price there was no chance of any improvement. They could not go on in the same way as at present. He admitted the expenses were large, but they were unavoidably large. As the Chairman had said, the Cape Copper Company were smelting their own ores upon advantageous terms, and he urged upon the directors and shareholders of Devon Great Consols the necessity of taking some steps to get a better price for their own copper. (Hear, hear.)

The CHAIRMAN said it was evident that two of the gentlemen who had spoken were new shareholders. The remuneration referred to was voted for two directors, and not to three, as one gentleman had since retired, and his place had not been filled up. At the next meeting the shareholders could consider what the remuneration should be. He could only say that the directors had given very great attention to the affairs of this company. He might remind them that this was not an ordinary mine, but it was an enormous number of mines, which made up, on the whole, the largest undertaking in this country. There was no other similar undertaking where there were such extensive operations, or which required such care and attention as in this. Beyond that it was, in fact, the largest of its kind in this country, and required a great deal of supervision and care with respect to that commodity called arsenic.

He could only say, speaking individually, that this company occupied a great deal of his attention, not only during the day, but also at night. There was a great responsibility in looking after the welfare of such a mighty undertaking. He believed the machinery, plant, and various other items of expenditure alone had cost between 300,000s. and 400,000s., and it necessarily required a very large amount to keep things going if they did not want the place to go to wreck and ruin. (Hear, hear.) When I came into the company things had worked down to a considerably low ebb, and he most important to keep things going, and to keep things in proper repair, and prevent accidents to the machinery, and so on. He thought great credit was due (and he said so at the last meeting) to the local management, and if the shareholders would go down and see the property he was sure they would endorse every word he had said. The engines, water-wheels, and everything were kept in perfect order. Night and day the agents were at it during the last very severe winter, and, comparatively speaking, they went through that trying period with very little accident indeed. It cost him many sleepless nights, and so it did Mr. Bowden, who on one occasion had the very greatest difficulty in getting from his house to pay the wages of the men, and he hoped that, in a very short time the shareholders would have something definite on the subject. (Cheers.) He thought it was to the welfare of the mine that something should be done in that direction, and in all probability in a month or two they would hear something. (Cheers.)

Mr. STEWART: It would make a difference in our favour of some thousands a year to us.—The CHAIRMAN: Yes. (Hear, hear.)

A SHAREHOLDER said they were all agreed that the Chairman was most able and hardworking, and no doubt attention had been called to the remuneration of the directors, because some of the shareholders felt that whilst there was no dividend they were not getting as much as they should be.—The resolution for the adoption of the report and accounts was then put and carried.

A SHAREHOLDER said he believed under the agreement with the Duke of Bedford, the company was compelled to sell the ores at the Cornish tickings.—The CHAIRMAN: Yes; it is the custom, and has been from the commencement of the company.

The SHAREHOLDER: Then our hands are tied so far as that goes.—The CHAIRMAN: Yes; but we and other mines have to get terms to go elsewhere. "Fair trade" as well as "Fair trade." (Laughter, and hear, hear.)

A SHAREHOLDER: Did I understand that negotiations are going on now to get rid of this offensive clause?—The CHAIRMAN: Yes.

A SHAREHOLDER drew attention to the fact that in the report the statement was made that certain of the drivages had been suspended. He asked why this had been done?—Capt. RICHARDS said it had been done to curtail the expenses during the recent and present dull times. The chances at those points were good, but during the depression it had been thought better to ease the expenses, and work the more important points. (Hear, hear.)

Mr. MOSES BAWDEN said he would explain this a little more fully. During the past six months they had laid open 185 fms. of ground. By using the rock-drill he had had the quantity of ground that they would have done by hand labour. Bearing in mind the desirability of reducing the cost, the directors had gone very carefully into the matter; and seeing that they had in the last 12 or 18 months laid open twice the quantity of ground they had formerly done by hand labour, they thought they were justly entitled now to suspend certain points, and keep only the rock-drills at work (by which they would be laying open more ground than by hand labour), and put the men who had been employed on the suspended points to breaking copper ore.

As the Chairman had remarked, they were very much disappointed that they did not get 2000s. for the last sale of ore, instead of 1830s.; he was never more astounded in his life than when he saw the result of the sale. The directors hoped by suspending operations at certain points for a short time, and thus lessening the cost, to considerably increase the returns, so as not only to just cover costs, but even, at the present low price of copper, to leave a little profit, if not a large one. (Hear, hear.) A shareholder had remarked that they ought to lessen the cost by one-half; if that shareholder would go over the property with Captain Richards he would not go away with that opinion; for if they lessened the cost by one-half they would have the whole dead standing cost and monthly charges going on, and they would not be getting the output which they could now get. The most that he could say in mind that the money expended was not coming out of their pockets. There was only 12 subscribers. Three years ago they were 6000s. in debt; since then they had divided 17,500s., and kept 5000s. to work the mine with; and the directors hoped that, by working the mine in the present mode, instead of decreasing the 4000 or 5000 tons they would

increase it to 6000. If copper went up in price, and the company got what he considered a fair price, the directors would be able to give the shareholders a dividend again. (Hear, hear.) The directors were not asking the shareholders to put their hands in their pockets. The ore had sold for 17s. 11s. 11d. per ton; such a thing was never known before, and he hoped it would never occur again. They must go with the times; wages and iron had increased, and the price of copper had gone down. But he hoped he had shown that, by decreasing the cost, they would not do themselves a benefit but an injury. (Hear, hear.)

On the motion of a SHAREHOLDER, a hearty vote of thanks was passed to the Chairman and directors and the officers of the company.

The CHAIRMAN: I beg to thank you, gentlemen, for unanimously passing this vote of thanks to myself and my colleagues. All I have to say is that we do our very best for our own interest and that of our friends, who are very largely connected with the company, as well as for the general body of shareholders at large; and I can say that Mr. Bowden, and Capt. Richards, and all our staff, are working energetically to that end, and nothing is wanting on our part or theirs, I believe, to do the very best we can under the circumstances. (Cheers.) Mr. Bowden, perhaps, has taken a little too sanguine a view with respect to the next six months. It may be realised—I do not say it will not—but whether it is good, bad, or indifferent, the shareholders will have it always direct from me, and I will let them know the truth whether it is bad or good. (Cheers.) Mining is of such a nature that you cannot regulate matters as you would in other matters of business. We well know what they have had to contend with in iron works and in connection with iron produce in regard to bad times, and also what railways have to contend with in bad times. You have an increase in your railway traffic and increase in the cost. But the result will be considerably to the benefit of the shareholders, in all probability, in the next six months. It is supply and demand which regulate all these things, and so it is with Devon Great Consols. If we had got the price which we got in the corresponding six months of the previous year we should have shown 4000s. better, and if our labour, iron, and coal, and timber had been cheaper, it would have gone to the credit of the accounts. Is there any shareholder so unreasonable as to tell us that we can regulate or control these things? (Hear, hear.) Let any shareholder come forward and tell us that he can alter it or make a different state of things. I cannot alter it. The directors have done their very best for your welfare. Copper may go up, and is going up, and we hope that during the next six months we shall have a better price for our arsenic and copper. (Cheers.)—The meeting then broke up.

KIT HILL GREAT CONSOLS COMPANY.

The ordinary general meeting of shareholders was held at the company's offices, Austinfrs, on Thursday.

The Right Hon. Lord CLAUD HAMILTON in the chair.

Mr. W. H. ALLEN (the secretary) read the notice convening the meeting, and the report of the directors and statements of accounts to Oct. 31, showing a cash balance of 6385s. 0s. 10d. were submitted.

The directors referred to the manager's report, subjoined, to show that a large amount of surface work has been accomplished, and that the engine has been started to drain the mine, which it is expected will be effected in the course of next month. Considerable progress has been already made in driving the great tunnel or adit level by hand labour, and arrangements will be made forthwith for the employment of rock boring machinery, in order to drive the tunnel with greater expedition.

The following is the managers' report:—

Nov. 10.—During the past six months the engine has been put in thorough repair, with a new 35-in. cylinder, cylinder case, piston, and piston-rod, nozzles, steam pipes, air-pump, and condensing work, and brasses for the various bearings; the remaining portions, including the boiler, have been carefully repaired and fitted. The repairs of buildings, engine-house, boiler house, smith's shop, dry, carpenter's shop, and count-house, have also been completed, and they are now in good order. Lines of rods and bobs from the engine to the north and south shafts, together with capstans and shears at both shafts have been erected, and the engine has been most successfully started and is working well, being quite equal to a new engine. The north shaft has been cleared, and made good with dividings, casings, and ladder road to the 36 (or adit), and we shall now proceed to drain the water with all dispatch, so as to reach the bottom, and, as far as possible, where we shall find the valuable tin ground previously reported. The adit level for taking off the water as pumped from the north shaft has been cleared and secured for about 200 fms. in length, and a shaft upon this adit also cleared and secured, and footway placed therein.

The tunnel started at the north side of the hill to intersect the whole of the numerous south lodes in the company's property has been driven 27 fms., 9 fms. of which have been secured by an arch of masonry; and we have about 16 fms. more to thus secure, which is at present kept open by strong timber. We consider the strata now sufficiently firm to stand without the use of timber. This tunnel being driven 8 ft. by 8 ft., and will come in at about 110 fms. deep. The importance of driving this tunnel has been clearly set forth in previous reports, and we have no doubt that valuable discoveries of both tin and copper will be made by it. At the granite quarry about 250 fms. north of the engine house on the hill the men came upon a lode and some old men's workings on it. This lode being of a very promising character a small trial on it has been made by driving and sinking, and some good tin work has been broken therefrom. After the wet season set in, finding it expensive and inconvenient to prosecute, further explorations are for the present discontinued; this lode, however, is of great promise, and will, no doubt, be found highly productive as the workings are extended on it. This is one of the many lodes that the tunnel will pass through. We are now quite ready for the rock-boring machinery, which, we believe, you are in treaty for. As we have before stated, our confidence in the future prosperity of the company's property is great.—MOSES BAWDEN, ISAAC RICHARDS, WILLIAM CLEMO.

The CHAIRMAN said he would offer a few observations, and in the first place he would congratulate the shareholders upon being connected with a property which he considered one of the most promising in the rich county in which it was situated. It stood in an advantageous position. With regard to its merits, he did not know whether many of the gentlemen present had seen the property with which they were connected. The hill was 1200 ft. high, and one mile in width, and the same in breadth. It was the highest hill in the district. There were old works on the properties adjoining from which there had been paid handsome dividends, and all the veins from which the mineral had been taken converged into this great hill, so that there was no doubt it was a treasure-house of wealth in the future. The property being so large, there was much to be done to bring out its great sources of wealth. The directors had not been idle during the past six months; they had been repairing engines, setting up new works, repairing engine-houses and boilers, and setting the work in order. All this work, however, has been done in the most substantial manner, so as to admit of permanent use. The directors looked to a long and successful future, and they had not done any work for a temporary object, but all had been done in a substantial manner, so that for years to come the company would derive benefit from the work so carried out. (Hear, hear.) The line of rods was working in a good manner, and the pumps were also working excellently. The water was almost pumped out, and the directors expected that in the next ten days or a fortnight it would be entirely cleared out. He must mention that the main work, to which they looked for much of their future success, was the adit which had been commenced at the north side of the hill. It commenced about 600 ft. below the summit of the hill, and would be driven in about 3/4 mile to meet the old adit. Therefore they would see at once that this was a great undertaking. The width of it was about 8 ft. by 8 ft., so that it was a very large adit. This had been already commenced, and a certain portion (as much as was considered necessary) was protected by masonry. The work was being proceeded with as fast as possible, but not until they adopted boring machinery they could quite understand that the progress would not be very rapid. At present it was being driven by hand labour as fast as possible, but even under the most favourable circumstances it could not progress at a greater rate than about 4 fms. a month, whereas when they adopted the rock drill system and they could have four drills abroad, they expected to drive from 25 fms. to 35 fms. a month. But such was the length of adit that even at that rate of progress it would take from two to two and a half years to complete the work. But although it would take that period to complete the work, there was no doubt they would cut cross lodes and veins which would be most valuable; but, whilst they might work those lodes and veins, the directors did not intend to let any temptation of that kind obstruct the great work of driving the adit. Therefore they must look forward to a period of heavy labour, which would not be immediately remunerative. But the upper shaft would soon be producing marketable produce, and there were most favourable indications with respect to that. Within five or six months they expected to produce valuable marketable ore from the upper shaft, which he had mentioned as already working most favourably. All this work had been performed in the most excellent, permanent, and efficient manner. He considered they were all very fortunate in having been able to obtain this valuable property with the works, which, although neglected for some years, had been, at a very small expense, rendered perfectly useful and as good as new. They had been very fortunate in securing the property at the price they had done; this arose from the fact that the former proprietor, being aged and a healthy man, became indifferent to carrying on the works, which had been long carried on, and when some of the machinery broke down he gave it up, and said he would have nothing to do with it, and this accounted for the shareholders having secured it for the moderate sum mentioned in the balance sheet. He was happy to say that he and the gentlemen associated with him on the board did their duty, and he went down a few days ago to accurately examine the property, so as to be able to give the shareholders the latest information; that he was happy to say everyone came away highly impressed with the satisfactory prospects which were before the company, and were also exceedingly satisfied with the progress of the works which had been carried on, and expected from the mine were of the most satisfactory character, and led the directors to hope the mine would be remunerative up to the level of the most celebrated mines in the neighbourhood. (Cheers.) In conclusion, the Chairman moved that the directors' report and statement of accounts, and also the agent's report from the mine, be received and adopted.

Mr. PETER WATSON: I have very much pleasure in seconding that resolution. It is very true, as my lord has stated to you with respect to this property, it is going to be a very big property. I have no doubt about it. I do not like to be too sanguine, but I would ask you to look at that plan behind you. You cannot get such a plan every day. It is one I have in my possession, made in the year 1848, and the pink colour to the left, which shows the lodes, shows that the old proprietor had very good grounds indeed for putting up machinery and sinking two shafts at an enormous cost, and many years it took him, and individually he was a man who knew more about mining than a good many; being a miner in that district all his life, and he spent an enormous sum

In sinking that shaft. He had good reasons for expecting results at a certain depth; he left off apparently at a depth of which, I hope, we may expect some good results when the water is out. The directors have stated they hope the water will be out of the shaft next month, but from what we could see at the mine the other day, and from what we have heard to-day from Mr. Bowden and Capt. Richards, we shall have the water out in all probability within a week or ten days, and we shall find tin there—there is no doubt about it. (Cheers.) But you must understand that we have to sink and drive levels, and open out the mine, but in doing that we expect as a matter of course to find rich tin ground. There has been a large quantity of tin found from that, and the deeper they go, as is the case with most granite lodes, if we may judge from what Dolcoath is doing, the deeper they go the richer they are. In fact, under the granite formation there are enormous riches. What has been seen in the district at Hingston Down and at the Clitters Mine, where they had a wonderful sale of ore the other day. They are in the granite formation, and seeing that we have well known rich tin and copper lodes, and perhaps lead and silver-lead as well, coming into the hill, we may anticipate a good future. The lodes are laid down in that plan of 1848, and how many more there are there we do not know, but if you go to the top, and see the workings which have been turned over by the ancients for tin, it is difficult to know what amount of mineral has been got there. These are surface indications, and they have never failed in Cornwall in having riches in depth. These are the riches we expect in sinking deeper and in driving levels, and by diving the tunnel, which is one of the biggest works ever undertaken in Cornwall. You could almost take the Flying Dutchman into it if necessary. (A laugh.) However, it is a work which we are going to carry out as expeditiously as possible. In mining there is no certainty, but I believe there is a great future before us. I may also mention that there is wolfram in the mine, which fetches a very large price. (Cheers.)

A SHAREHOLDER asked whether they had yet found any metal in driving the tunnel?—The CHAIRMAN said not yet, as the tunnel had only been driven 27 fms. They had not gone far enough to find mineral.

Mr. MOSES BAWDEN said the mouth of the adit, from its situation, afforded every facility for making dressing-floors, and the debris would be made useful. The water could also be utilised. In fact, they could not have selected a better position for the mouth of the adit.

A SHAREHOLDER: What will the adit cost per fathom to drive?

Mr. M. BAWDEN: Just about 6s. per fathom, at this time, by hand labour. It will cost about the same by rock drill, but we shall proceed about five times quicker. Mr. Bowden went on to say that tunnel would come in as a cross-cut to all the lodes and veins running east and west, as the tunnel went north and south. The object was to drive the tunnel perfectly straight, and on a level, so as to enable them to lay two lines of tramway, worked by an endless wire-rope, so that the tin ores could be taken to surface, and the empty trucks returned. This would be worked by an engine at the mouth of the tunnel. Long before two years they expected to cut profitable veins. Some people believed that before they reached the apex of the hill they would cut 50 mineral veins; he did not go so far as that, but if they took the veins marked on the map it would certainly be that number. No doubt the work now being done there would eventually prove a very grand work, and he had no doubt that the mine would turn out a splendid property.

A SHAREHOLDER asked Capt. Richards as to the capabilities of the engine which had been recently set to work? He had heard it was not adequate to draining the water. He also asked why they were not driving on the tin lode which was discovered in the granite quarry shortly after they commenced work?—Capt. RICHARDS said the engine was adequate in every respect for all the purposes required from it, and would carry the shaft down 200 fms. without any difficulty. (Hear, hear.) They were now 6 fms. below the 60. As regards the lode in the granite quarry, which was a very promising lode, they sunk 14 or 15 ft. on the course of it, and had raised some nice tin-work; but it would be more convenient to work the lode after the adit came up to that point. It would be more expensive to work it from surface than from the deep adit. It could not be profitably worked at present. The adit would reach that point within a year or a year and a half.

Mr. MOSES BAWDEN, in reply to a shareholder, said he hoped the rock-drills would be at work in about two or three months.

Mr. PETER WATSON said the various lodes going into the hill had produced 2,000,000 lbs. of stuff in neighbouring mines. Those who waited would be well rewarded; the indications were such as to make the directors believe that the shareholders would have their reward. (Cheers.) They could not have a better speculative property than Kit Hill, but it took time and money to bring about results. They had started manfully on the work of driving the tunnel, and he hoped and believed they would be able to obtain results whilst the tunnel was being driven.

The CHAIRMAN, in reply to a shareholder, said there was no probability of any further call at present.

The resolution for the adoption of the report and accounts was then put and carried.

The auditors were then re-elected, and ten guineas each awarded them as remuneration for their services.

Mr. MOSES BAWDEN said it was right to mention that the work done at the granite quarry had been done by the courtesy of the proprietor of the granite quarry; he agreed with Captain Richards that it would be more economical to postpone working that point until the adit was further advanced.

Mr. MATTHEWS (the engineer), in reply to an observation, said that the machinery had been somewhat delayed, owing to the large amount of orders on the foundries in Cornwall, and not from the fault of anyone connected with the mine.

A cordial vote of thanks was passed to the Chairman, directors, and the staff, and the meeting broke up.

DEVON GREAT UNITED COMPANY.

The ordinary general meeting of shareholders was held at the company's offices, Austinfriars, on Thursday.

The Right Hon. Lord CLAUD HAMILTON in the chair.

Mr. W. H. ALLEN (the secretary) read the notice convening the meeting, and the report of the directors and statement of accounts to Oct. 31 were submitted.

The directors report that during the twelve months which have elapsed since the starting of the engine considerable progress has been made in pumping out the water from the shaft, and in putting the several levels into working order, and, as will be seen by the manager's report, the development of the mine in driving various adits and sinking the shaft is being proceeded with vigorously. The directors have now under consideration the purchase of an air-compressor and receiver and rock-drills, in order to develop the property with still greater expedition. The statement of receipts and expenditure, made up to Oct. 31, shows that there is a credit balance of 2099s. 15s. 7d.

The report of the managers states:—
Nov. 10.—During the last six months we have completed the necessary pit-work for draining the mine, and have now permanent plunger-lifts at the 30 and 60 fms. levels at the West engine-shaft and the 93 fms. level at the Dolcoath shaft, also a drawing-lift from this point to the 104. The shaft has been divided, and a skip-road laid and made complete, together with permanent ladder-rod to the 104. Willesford's shaft is now in regular course of sinking, and has reached a depth of 4 fms. 3 ft. 6 in. below the 104, the lode proving 3½ ft. wide, producing some very good arsenical muddle and a little copper ore, and is altogether of a promising character.

Looking at the very promising character of the lodes and the strata in connection therewith, we have reason to believe by a further spirited development of the property that good discoveries of copper and arsenical ores will be made, and we would advise the small engine we have, and which can be used for working the same; and we would further advise that the said rock-drills be applied to driving the 60 west of Watson's engine-shaft, on Capel Tor lode, and on the West Maria lode, so as to push these two points back to the cross-course (before mentioned) as fast as possible, and it is our opinion that good discoveries of ores will be the result, besides which we shall be putting ourselves in a much better position for the development of the Wheal William's part of our property.—MOSES BAWDEN, ISAAC RICHARDS, WILLIAM CLEMO.

The CHAIRMAN said: Gentlemen, it is not my duty to detain you very long. You are all aware that this is a new undertaking, and that this is, in fact, only the third report we have issued for your consideration, but I am happy to say that though the undertaking is young it is one which is full of promise. The circumstances under which we were able to secure this property enabled us to get it remarkably cheap, and I am quite certain that anybody who now goes down to the mine since it has been put into working order will be astonished to know that with so small an amount of capital such a valuable property has been acquired for the company. One of the causes which led to this valuable property falling into our hands upon these favourable terms was what was to us a fortunate quarrel amongst the former proprietors, who, being unable to come to any mutual arrangement, came to the determination not to work the mine. Since it has come into our hands we have entirely restored the machinery we have set the pumping going, and have cleared the engine-shaft, and set the whole thing in excellent working order; and I am quite sure that any person accustomed to these sorts of arrangements of working will be astonished to know the cheap rate at which we have set this great work in action. I am happy to say that already we have the most favourable indications. We have raised considerable quantities of rich materials, both copper and arsenic, of which specimens are here, which experts and others acquainted with such matters can inspect for themselves. Everything is going on in a most satisfactory manner. We have already a good amount of these ores. We have not sent any to market yet, but we hope soon to be able to do so. You will see that we have in consideration the purchase of an air-compressor and receiver, and rock-drills, in order to develop the property with still greater expedition. We trust that that intention will receive your sanction, as in these times the more rapidly we can proceed with our own works the more profitable will be the results to all concerned. That being the only subject alluded to in the report, I would say nothing more on the report. You will all have been able to look through the balance-sheet yourselves, and be enabled to ask any questions on any points that may require elucidation, and any such questions will be immediately answered, and I trust satisfactorily. Having stated that Mr. Bowden or Capt. Richards would be happy to give the fullest information, he (the Chairman) moved "that the report of the directors now read, and the statement of receipts and expenditure, and also Capt. Isaac Richards's report on the mine, which has already been circulated among the members, be received, adopted, and entered on the minutes of the proceedings."

Mr. PETER WATSON: I shall have much pleasure in seconding my lord's proposition, and in doing so I should state that he has taken a considerable amount of interest in the property. We met on the mine on Thursday last, and we were very much pleased indeed with the stuff we saw coming up from the shaft. Capt. Richards and Mr. Bowden will perhaps dilate at greater length on the subject and with regard to what we are doing than I can at the present time. At any rate we are looking very cheering indeed in sinking the shaft and driving the levels. (Hear, hear.)

A SHAREHOLDER: Have you formed any estimate of the cost of diamond-boring machinery?—Mr. BAWDEN: We are in negotiation for some now. In reply to a further question Mr. Bowden said they had three engines at work; a large pumping, a 24-in. winding engine, and a smaller engine between the two others taking its steam from the boiler of the large engine.

The motion was then carried unanimously.

Captain RICHARDS, responding to a shareholder, said he had great pleasure in endorsing the statement contained in his report. There could scarcely be finer stones of ore than those which had been raised from the 60 west and the bottom of Willesford's shaft, some of which were on the table.

Mr. PIGGOTT: What do they contain?—Capt. RICHARDS: Copper ore and arsenic.

Mr. PIGGOTT: No tin?—Capt. RICHARDS: I cannot say. They would have to be treated separately for tin. The indications are very good indeed, and we have never seen richer stones than these, some of which contain 40 per cent. of arsenic. They are raised from a vein 1 ft. wide in the lode.

Mr. WATSON: When you commenced to sink the shaft the lode was comparatively small—I think about 1½ ft. wide?—Capt. RICHARDS: Yes; but it is now 3½ ft. wide, and it contains very good stuff. The prospects are very good indeed, and I have every confidence in the future of the undertaking.

Mr. PIGGOTT: From what depth are those stones raised?—Capt. RICHARDS: From the 60 fms. level. He added that he had every confidence they would get something very rich when they sunk the shaft under the great bed of muddle.

Mr. WATSON said the stones were raised from near that portion of their property which was close to the part in Devon Consols where they first got their enormous riches, which sent the shares of that company from 12s. to 800s. each. He did not say they were going to have anything like that in Devon Great United, but there was an old Cornish adage that said "Muddle rides a good horse," and he believed that they would have a very rich discovery under the great bed of muddle.

Votes of thanks were passed to the Chairman and directors, and to Captain Richards, Mr. Bowden, and the staff, and the meeting then closed.

DRAKEWALLS MINING COMPANY.

An extraordinary meeting of shareholders was held at the offices of the company, Austinfriars, on Thursday.

The Right Hon. Lord CLAUD HAMILTON in the chair.

The SECRETARY read the notice convening the meeting.

The CHAIRMAN said it appears that in several instances of other companies the same Article as that which I am about to ask you to rescind is in force, and was found equally objectionable by the Stock Exchange Committee; we have, therefore, invited you to rescind it. Mr. Barber will explain any technical details if necessary. He then moved a resolution rescinding Article III. of the Articles of Association, which had reference to unclaimed dividends being forfeited for the benefit of the company.—Mr. MACE seconded the motion.

A SHAREHOLDER: Has a quotation been applied for?—Mr. BARBER: Yes. It is in consequence of the objection of the Stock Exchange Committee that the Article is proposed to be rescinded.—The motion was carried unanimously.

Mr. M. BAWDEN then read the following report:—

Nov. 21.—We are pleased to state that the mine is now permanently free from water to a depth of 72 fms. This has been accomplished by means of driving the deep adit, which has taken several years to do. Since the company acquired this mining property, we have driven about 70 fms. of the said adit, and we are driving a 20 fathoms level west of the engine-shaft which is laying open (by aid of the rock drills) west of the course of the tin branches, the object being not only to lay open tin ground, but to make an adit or water-way at the depth of 72 fathoms throughout the mine. We have cleared and secured Matthew's shaft and the engine-shaft from surface for 72 fathoms deep, and put new kilpicks in each of these shafts. In doing this work we have had a considerable amount of trouble and expense, as we found the timber badly crushed, and a large quantity of debris in the shafts. In clearing these shafts, and the shallow levels adjacent thereto, we have taken out about 600 tons of black tin, which is now ready for the market, and can be sold when you think fit. We are driving a 20 fathoms level west of the engine-shaft which is laying open some profitable tin ground; also sinking a winze below the 40, west of Matthew's shaft, so as to enable us to take away as cheaply as possible a large extent of profitable tin ground below this point between this and the engine-shaft. At the deep adit we have cut into the copper lode for 12 ft., and consider we have more lode still standing to the north. We have not yet met with copper ore to value, although the indications are such as to warrant our making further trial. At surface we are getting on with the repairs to dressing floors, &c., as fast as the nature of the work will admit, and shall be prepared to start the stamps whenever we may require to do so.—MOSES BAWDEN.

Mr. BAWDEN added that as soon as Matthew's and the engine-shaft were communicated they would have a large quantity of stuff to come to surface, which would require to be treated by steam stamps. They had now four water-wheels with 45 stamps attached, but they could put the steam stamps up directly they were required at a day's notice. He considered that they had a very fine property at Drakewalls. It was now permanently drained to a depth of 72 fms., and he believed that by driving the adit they had made a permanent saving of from 5000s. to 7000s. per annum. The whole of the work had been done without any accident to the men, and without let or hindrance. The mine was only 160 fms. deep, and the grand workings were only 60 fms. from surface, and they had proved throughout the mine that the old workers had left branches for about 16 ft. wide standing. Just before the old company shut up that part of the mine in consequence of the very low price of tin—that was in 1876—they returned 25 tons of tin from the south branches in four weeks' working.

Mr. PETER WATSON hoped the shareholders would go and see the property for themselves. The mine was one of the oldest tin mines in the world. It was in the granite formation, and the mines now working in that strata were letting a great deal of light into the eastern part of Cornwall. He remembered keeping the books of the mine in 1817 and 1848, when his late uncle had an interest of some thing like 50,000s. in this property; but mining then and now were two different things. They would put the rock borers to work, and great progress would then be made. They had drained the mine of 70 fms. of water, and the lode was found to be as wide as that room with rich branches of tin going through the whole lode, and he had not the slightest doubt that if worked energetically they would have a very rich and profitable mine. They had on the mine and paid for 101 heads of stamps. He was the largest shareholder in the company, having some thousands of shares, and he was perfectly satisfied that the mine would turn out well. (Applause.)

Mr. BAWDEN said that Mr. Bowden and he had now from 40 to 50 men at work, and they would increase the number as required. They could send at once to market 600s. worth of ore, which had been taken from clearing the two shafts and the old levels. This was very satisfactory to the shareholders no doubt, and to himself it certainly was, for he was the second largest shareholder in the company.

Mr. WATSON expressed his belief that tin would go to 120s. per ton.

Dr. BROWN, Mr. MACE, and Mr. MATTHEWS, who had visited the property, spoke highly of what they saw there, and at the expedition which had been used in the operations.

A cordial vote of thanks to the Chairman and directors closed the meeting.

WHEAL GRENVILLE MINING COMPANY.

The four-monthly meeting of shareholders was held at Mr. Mitchell's offices, Union-court, Old Broad-street, on Thursday.

Mr. R. W. GOULD in the chair.

The notice convening the meeting having been read the minutes of the previous general meeting were read and confirmed; the minutes of the committee meetings were also read. The agent's report and the accounts having previously been circulated were taken as read.

The CHAIRMAN said they met under happier circumstances than it had been their lot to do for many years past. Six months ago he had asked them to look forward to brighter and more hopeful times, and he hazarded the opinion that before the year was out tin would be above 90s. per ton, and that they would be getting 60s. per ton for their tinstuff. He referred to this fact now, not in any spirit of egotism but in thankfulness that they had done so well as they had. Foreign tin was now at 106s., and English ingots at 110s., and at their sale on Tuesday, which, of course, did not affect the accounts now presented, their tinstuff realised 85s. 15s. per ton. (Hear, hear.) During the past quarter the committee had paid a lengthened visit to the property, and were very pleased with all they saw there. They had five engines at work, with eight or nine boilers all in good condition, and doing full and regular work, and in every respect working in a very satisfactory manner. They had 84 heads of stamps, 12 of which had been erected in the past four months, and which had been paid for out of the current revenue. Each head of stamps was capable of stamping 15 or 16 cwt. of ore per day, and that was saying a great deal, for they had to deal with some of the toughest stuff in Cornwall. They had a powerful steam crusher delivering the whole of the ore to the stamps, and crushing and breaking it up to the necessary fineness, thus doing work which was formerly done by hand labour. The engine and crusher cost 40s. and had done really good work, and since they had been in operation about 250, or 300, a month had been saved. Considerable additions had been made to the boulders, three or four new boulders having been put up, and 50 new frames had been erected and paid for in the 16 weeks, and they were now erecting 150 additional frames, for which the slime pits had already been prepared. A new tin house had been erected at a considerable cost, and was capable of holding 150 or 200 tons of tin, a quantity which he hoped would never be put into it, for he was by no means an advocate for stocking tin. During the four months also a very large space—probably 140 feet by 30 feet—had been covered in for protecting the women and girls who dress the ore, and he trusted further improvements would be made in that direction for the health and comfort of their workpeople. He was aware that the mine was only 190 fms. in depth at present. In that depth five levels were going eastward. The 140 had been driven 123 fms.; the 150 level, 165 fms. in length; the 165 level had been driven 128 fms.; the 178 level only been driven 40 fms. as yet; and the 190 level only about 18 fms. These points were all worth, at the date of the report, something like 12s. per fm., or, taking into consideration the rise which had taken place since the report was made, they might be set down at 13s. or 14s. per fathom, all coming from the same shaft and in the same direction. One of these levels would probably soon unearth the East Grenville reef, and they would then be able to work that as part of the Wheal Grenville Mine. Going westward they had only one level (the 165 fms.) at work, and that had only been driven 24 fms. between Gould's shaft and the Western shaft; but he was most anxious to see the western part of the mine unwatered, for the South Cornduvor people, who had the Wheal Grenville lode to the west of any property this company had, had made it

reported a very valuable and important discovery in the portion of their property west of Wheal Grenville. He certainly thought they should push on and unwater the western part of their mine. They had 14 stopes at work on the mine of the aggregate value of 195s. at the date of the report, probably now worth considerably over 200s., and they had six tribute pitches which were being worked at a tribute of 11s. 3d. in the 12. All the pitwork, pumps, floors, machinery, and works of every kind were in most satisfactory order, and in such condition as he had never seen them in before. During the 16 weeks they had raised 127 tons 11 cwt. of tin, or an average of 32 tons per month, or 8 tons per month more than in the preceding four months. This had realised 7528s. 11s., or an average of 60s. 1s. per ton, as against 55s. 15s. 2d., or an advance of 45s. 10s. 1d. At the same time the costs of raising the tin had been reduced to the extent of 8s. 1s. 4d. per ton, which was principally due to the employment of the stone crusher, instead of crushing by hand labour. The balance divisible was 1552s. 11s. but the actual net profit made on the 16 weeks' operations was 2096s. 7s. 7d. (Applause.) Referring to the probable results of the current four months' working, the Chairman said he had no doubt that Capt. Hodge, who was always careful not to over-estimate the returns, would give them more than 35 tons a month, and for this he believed that they would realise 70s. per ton, or a profit of about 3300s. on the four months' working. (Hear, hear.) There was every probability that tin would go higher, and that foreign tin would probably be long quoted at 115s. per ton. He congratulated his fellow-shareholders on the possession of so fine a property, and that Wheal Grenville was coming out of its obscurity and taking its place among the foremost and most profitable mines in Cornwall. (Applause.) The Chairman then moved the adoption of the accounts and the agent's report.

Mr. BAWLINGS (Harvey and Co.) seconded the motion, which was carried unanimously.

On the motion of the CHAIRMAN, seconded by Mr. BUMPUS, the minutes of the committee meetings were confirmed.

The CHAIRMAN said they had no debts whatever—(hear, hear)—and proposed a dividend of 5s. per share, payable forthwith, and said he thought he could promise a better dividend at the next meeting, for they had already made 2s. 6d. per share towards it. The 5s. dividend would absorb 1500s., or 500s. less than the actual net profit. (Hear, hear.)—Mr. W. BELLINGHAM seconded the proposition, which was adopted.

Mr. F. G. LANE referred with pleasure to the position of their affairs, and said that his prognostications at the last meeting had been proved to have been well within the mark, and he endorsed the belief of the Chairman that they would have better dividends in future.

Mr. BAWLINGS thought it was highly important that they should develop the western part of the mine, and said that the 84 heads of stamps would treat all they could expect to raise for some time to come, so that there would be no further expenditure in that direction as there had been lately.

The meeting closed with a vote of thanks to the Chairman, the committee, and Capt. Hodge.

THE BASSETT AND BULLER CONSOLS.

An extraordinary general meeting of this company was held on Thursday, at the Cannon-street Hotel.

Mr. HENRY MAUDSLAY, M.Inst.C.E., in the chair.

The SECRETARY having read the notice convening the meeting,

The CHAIRMAN said he was sorry to remark the one cause of his being in the chair at the present moment was the ill-health of their friend Mr. Ellison. They had arranged that he should do so, but he was not well enough to take the place. He should state that the meeting was informal, in consequence of there not being a sufficient number of shareholders to constitute a quorum. Probably, however, a few minutes conversation would give them an idea of the very valuable property they possessed. Capt. Pryor and his son had come up to London and had brought some valuable information, and the latter some beautiful drawings, showing the whole character of the sets and lodes and general arrangement of this property. It combined three different mines, which were abandoned a few years ago because of the then state of the market, and because they thought at the time that the copper was going to give out, and did not know anything about the great flat tin lode, which has since been cut into by West Basset, South France, and other neighbouring mines. He went down with the secretary on purpose to see this property before he took any interest in it, and found a very extraordinary country, a great number of chimney stacks, mines that were vigorously at work, and others that seemed to be in a state of quiescence and comparatively neglected. The indications of property showed them that there was a vast amount of mineral property all round, and he need hardly say to anybody who knew anything about Redruth it was a most extraordinary country. The property appeared to be on the surface a sort of barren desert, but when they went underneath it was about the most valuable spot in the world. He went from Truro to Redruth, and then all round their property, and he went for the express purpose of making himself acquainted with its value, and he was so thoroughly impressed by the extent and character of the minerals and properties altogether, and engine-houses with houses for their boilers all erected, the situation of the railways, that everything clearly indicated to him that their undertaking was an exceedingly valuable one, so much so that on his return he had the opportunity of taking up shares and subscribing his full quota to qualify himself as a director, and he was ready at any moment to pay the whole of the money that was necessary to be able to continue with his co-directors in developing this concern. The whole character of the property, considered by the value of the surrounding mines and the way that they had cut into the lodes below, and especially into the great flat tin lode, induced him positively to state it only wanted their co-operation, as of course it required some money to render their property a most valuable one. They were all aware that means must be obtained to work any mine. They could not work a mine without buying an engine, they had certain engine-houses which the moment they could be filled with the engine power, and so arranged that the water could be pumped out from the underground workings that exist, for he must tell them that all these three mines had been in working order, and had obtained a large amount of capital, and had really paid very well indeed during the time that they had been worked. Each of those three mines that now comprised one property had all returned large amounts of money. They were not ashamed to confess that they had come into a valuable property which others had thought fit to leave, and had left it because they thought the mineral was likely to run out altogether. They did not see their way to continue a speculation as they thought, but one of the surrounding mines had, through the energy of its mining agents and engineers, gone to such a depth that they had struck the great flat tin lode which had produced a result that had been a marvel to the world. The West Basset had equally struck the great flat tin lode, and was not half a mile from them, and they were perfectly certain that that lode ran under their property. The drawing that would be shown to them was a very carefully worked out sketch of all the information that had been obtained; it showed the different shafts, the adit levels, and the workings from one to the other, working down and altering the direction of a shaft that was going straight down and following a lode because it was valuable for working, and from which they obtained very good results. That showed the tortuous and devious course of shafts that had been sunk, and, therefore, under those circumstances they had to continue down to a certain extent downwards. The directors had now come to the shareholders to request their co-operation, believing that in a short time they would be able to develop this very valuable property. When they touched the great flat tin lode they would obtain a price 100 per cent. higher than it was when those mine were left off. Speaking as an engineer, he wished them to understand that the mineral, whatever its market value would be, was there. The mineral was there, and they were going to get it up and make use of it. The markets must rise and fall, but there was no shadow of a doubt as to the stuff being there, or as to the character of it. There were so many indications of it, and he was so certain that they could see for themselves. The surrounding mines had realised 40,000s., 50,000s., 60,000s., and a great deal more of profits. In conclusion, the Chairman called on Captain Pryor to give them the benefit of his opinion.

Capt. Pryor said he had made as long and detailed a report as possible in order to let the shareholders actually know what had been done and what it was proposed to do. He always liked to give his employers and co-shareholders a perfect knowledge of everything that they had done and that they were likely to do. Some had been blamed for not making everything known, and therefore he thought that every one should know the facts, and if there were any secrets never ought to be any secret in mining, and if he found there were any secrets in a mine, he should shut up his purse to it. Nothing afforded him greater pleasure than to meet the shareholders not only in London but in Cornwall, and his advice to them was to go and see for themselves. He was very much pleased to have accompanied over this property gentlemen who were as well up to mining as himself. Mr. Ellison, and a few other friends, went down, and he pointed out everything, and told them what he knew to be facts. He had had two or three other parties largely interested, and Mr. Maudslay, who knew as much as he himself, and that was the man he liked to meet, not one who knew nothing, and so on, they just grappled together very minutely into everything in connection with this property, and traced the boundaries from one end to another. That gentleman pointed out everything, and he went away very well pleased to see the property situated as it was, and to see the rich neighbours with whom they were in connection. In the first place their neighbours were West Basset, South France, Wheal Grenville, and others, all of which embraced the same lodes, the identical lodes that they had in their property. On the north side they had Carn Brea, and the neighbouring mines were the richest mines in the world. He remembered that Joseph Lisle, one of the greatest mining authorities we had in his day, used to say, when any one went to him to take a set—"How far is it off from Carn Brea Hill?" And if it were far off he would say—"Well, if you cannot set it elsewhere, set me again." That man made immense fortunes in working mines near Carn Brea. If they mined at Carn Brea Hill they could not go amiss. They had only to spend a certain sum of money, and they were safe for good results. The reason their mines had been abandoned was that they got from copper to tin, and tin ore was so low, having fallen from 75s. to 30s., that they could do no good. It was ruinous. It not only ruined those mines, but the best mines in Cornwall had hard work to exist, but through the introduction of boring machines, stone-breakers, and so on, they just grappled together, and those mines that were not so good and far advanced as the Dolcoath had to give way. There was nothing wanting in their mines but capital. Dolcoath was now 400 fathoms from surface, and he remembered these shares were given away, and 5s. a piece with them to take them, but now it was at the deepest point it was richer than ever, and tin ore is now over 60s. per ton, and the metal itself over 100s. per ton. He was pleased to meet the shareholders to-day, and was sorry that in limited companies people did not attend to their business. They invested their money, saying they would lose 500s., 1000s., or 50s., whatever it would be, and took no further interest in the undertaking. His advice to every one was to look after his own interest, and if he found he would find there was nothing in the world that paid better than Cornish mining. In conclusion Capt. Pryor gave the selling price of some of the leading mines in the neighbourhood, such as Dolcoath, Cook's Kitchen, Carn Brea, Tincroft, &c.

A SHAREHOLDER: Is it your opinion that our mine is equal to the average of these?—Capt. PRYOR: Yes; my report will go to the world, and I am not afraid to meet any man in the country or out of it on it.

Mr. JOSEPH PRYOR, F.G.S., said that his plan was made without any attempt to over-estimate the value of the concern. It was drawn to a scale, and there

was included in it no more than Mr. Maudslay and other gentlemen found on visiting the property. The present market value of 13 Cornish mines in the locality was one million and a half sterling. Nothing could be more concentrated than that. He had gone very carefully over the property from the fact that his father and friends held a large stake in it. The character of the great flat lode was that of almost uniform thickness, about 12 ft., and there were very few changes in it.

After a few further remarks, a vote of thanks to the Chairman terminated the proceedings.

EAST CHIVERTON MINING COMPANY.

A general meeting of shareholders was held at the offices, Queen Victoria-street, on Tuesday.—Mr. THOMAS SMITH in the chair.

Mr. GRANVILLE SHARP (the secretary) read the notice convening the meeting, and the minutes of the preceding meeting, which were confirmed. The accounts for 16 weeks ending Sept. 3 showed:—Labour costs and sundries, 806l. 7s. 3d.; merchants' bills, 145l. 14s.; plant, machinery, and timber, 867l. 2s. 7d. On the other side the lead sale—50 tons at 12l. 12s. 6d. per ton—realised 631l. 5s., leaving a debit of 1210l. 15s. 9d., and a balance of liabilities over assets of 488l. 16s. 3d.

The CHAIRMAN said: I think, gentlemen, you will consider with me that this is a very favourable balance-sheet. I believe we are making fair and substantial progress, and progress in the right direction; that is to say we are not encroaching upon our reserves, but are, in fact, adding to them materially, and considering the price of lead we are making a very good price indeed for our produce. The quality of the article we sell enables us to obtain a very large price for it. The price realised was 12l. 12s. 6d., and when you take into consideration the fact that the price of manufactured lead is 14l. 10s., or at the most about 15l., I think you will be satisfied with the price that our ore is fetching. I believe we have now made a turn in the affairs of East Chiverton. It has required a great deal of patience on the part of those shareholders who, like myself, have stuck to the mine for many years. We have had hope deferred on many occasions, but still we have had faith in our captain and in the working people, and I believe we are now about to reap the reward of our unwearied patience. I think that East Chiverton now will soon be out of the list of what are called progressive mines, and that in a very short time it will do without any calls and probably in less than 12 months it will enter the list of dividend-paying mines. I am very well pleased to see this balance-sheet, for it shows progress in the right direction. We have overdrawn our banking account to a certain extent, and we shall be obliged to make another call, but not such a heavy one as we made at the previous meeting, and Capt. Southey says that but for the new machinery which has been acquired for the further development of the mine we might have done without a call at this meeting. I am glad to see this expenditure for machinery for the development of the mine, and I am also pleased to see that our forfeited shares are considerably less in number than they used to be.

The SECRETARY: There are only 74 forfeited shares, but we must forfeit some to-day which have been on the books in arrears for the last two years. A gentleman offered 2l. 5s. for them at the last meeting, but we declined the offer, for they will realise more than that after a time. He stated that a second boiler had been added, thus obviating the necessity of stopping pumping in order to clean or repair the boilers, and that they had purchased a steam winch to replace the slower horse-power machinery. This would enable them to work more economically and more expeditiously.

Mr. DON: When do you hope to get the steam drawing power in action?—

Capt. SOUTHEY: I should think by the time the shaft is sunk to the next level.

The CHAIRMAN: Do you expect to get the arrears of call in?—The SECRETARY: Not all of them; but the shares are worth more than the amount outstanding on them.

On the motion of the CHAIRMAN the accounts were adopted and passed.—

Capt. SOUTHEY then read the following report:—

Nov. 19.—The resolutions passed at the last general meeting for the further development of this mine have been carried out with all possible dispatch, a drawing plot cut and solar laid down. Also cistern plot cut, and the same, together with the lift of pumps, from the 74 to the 90 fathoms in its place, and the engine-shaft sunk below the 90. Shaft sinking by six men and three boys, at 16l. per fathom. The lode in the 90 end, west of shaft, is worth 1½ cwt. of silver-lead per fathom; cost of driving 4d. per fathom. Having only horse-power for drawing the stuff, rather slow progress has been made in driving this end, especially since we commenced sinking the engine-shaft, but in order to overcome this difficulty a steam winch will be erected forthwith. We have one stop working by six men, east of the end; the lode here is rich, worth in some parts of the stop 3 tons of silver-lead per fathom. There being such a decided change for the better in the strata of ground in our bottom level it is our intention when the 100 is reached to extend a level east as well as west, in order to prove the lode in this direction, the indications of the lode in the shallow levels being exceedingly good. At surface an additional boiler is added to our pumping-engine, and boiler house completed. New slime pits are also made, and our floors enlarged. It is also our intention to connect a crusher to the steam winch we are about to erect for the more economical treatment of our ores. On the 14th inst. we sold 50 tons of silver-lead at 12l. 12s. 6d. per ton, and taking the present standard into account I consider the price very satisfactory, and if the lode is found so productive in the next level, and I see no reason to doubt, our returns of mineral will be doubled.—RICHARD SOUTHEY.

Capt. SOUTHEY remarked that they had to carry the stuff to West Chiverton to have them crushed, and then bring them back again, which, of course, entailed a good deal of expense; but, he thought, that after they got down to the next level they would be able to double the returns.

The CHAIRMAN: What do you estimate the reserves at now?—Captain SOUTHEY: Well, to be on the safe side I will say that we have 5000l. locked up in reserves.—The agents report was then adopted, and ordered to be printed and circulated amongst the shareholders.

The SECRETARY read a letter which he had received from one of the oldest shareholders in the mine, a holder of 137 shares who was unable to be present, recommending that a call should be made sufficient to enable the work to be carried on vigorously on the plan laid down by Capt. Southey, believing that all speculation as to the value of the mine was now at an end, and that it was only a question of energetic working to realise profitable results. The secretary then asked Capt. Southey how long it would take him to reach the 100.

Capt. SOUTHEY estimated that it would take them about three months if the ground continued as favourable as it was at present. He added that he hoped to sell at least 6000l. worth of ore in the next 16 weeks, and perhaps more.

On the motion of the CHAIRMAN, seconded by Mr. WALTER, a call of 2s. 6d. per share was made, payable on or before Dec. 22, with the usual discount of 5 per cent. on amounts paid by that date.

A special meeting followed when a resolution was passed forfeiting 55 shares, on which calls prior to that made on July 13 were in arrears, the amount due on the shares so forfeited being 43l. 16s.

The SECRETARY was of opinion that these shares with one or two exceptions—some of the shares standing in the names of deceased holders—would be redeemed before the confirmatory meeting was held.

The proceedings then closed with the usual compliments.

WEST CHIVERTON MINING COMPANY.

The four-monthly meeting of shareholders was held at the offices, Queen Victoria-street, on Tuesday.

Mr. GEORGE HEAP in the chair.

Mr. GRANVILLE SHARP (the secretary) read the notice calling the meeting. The accounts were taken as read.

A SHAREHOLDER asked whether any interest or commission had been paid to the bankers. He asked the question because he did not see any such items entered in the accounts.—The SECRETARY said it was charged every half-year, and was charged last half-year.

Capt. SOUTHEY, in reply to a question, said they were still raising blend.—

Mr. WEST: Supposing you sell the lead without mixing the halves with it, you would not get a better price for it?—Capt. SOUTHEY: Certainly; but you would not get such a good price for it as left.

A SHAREHOLDER expressed the opinion that the mine should be closed. For his own part he felt inclined to withdraw from the mine.—Mr. SHARP pointed out that nothing was easier. Any shareholder wishing to withdraw could send in a formal relinquishment of his holding, which would be entered in the books the same as a transfer, and an account would be sent him showing his liability to the time of relinquishment; but such shareholder would remain a "past shareholder," and would be liable for his share of the unascertained liabilities in case of the mine being wound-up within two years.

After some further discussion on matters of detail, the CHAIRMAN moved the reception and adoption of the accounts, which was seconded by Mr. WEST, and carried.

Capt. SOUTHEY read his report, which was as follows:—

Nov. 10.—We are still extending the 70 cross-cut south of the engine-shaft, but no well defined lode has yet been met with, notwithstanding some very kindly branches of muffle have been intersected. The end is being driven by four men, at 10l. per fathom. The lode in the 80 end east has very much fallen off, and is for the present suspended. The stop behind this end is nearly communicated with the 70. This stop is set to a pair of tributaries at 7l. per ton for lead. The 50 end east of shaft is also stopped, being 600—Batters: The shaftmen are stopping the bottom of the 80, and are about plying their coat in lead and blende.

During the past four months we have raised about 400 tons of mineral, but the output obtained being less than the previous quarter instead of more, as I calculated upon, we have, therefore, been unable to meet our expenses as anticipated, and it is with much regret that I am compelled to say another call is necessary at this meeting.—RICHARD SOUTHEY.

On the motion of the CHAIRMAN, seconded by a SHAREHOLDER, the report of the agent was received.

A desultory conversation ensued, in the course of which the CHAIRMAN stated there were very large quantities of blende, and the question was to place it on the market at a remunerative price. He suggested that before work was suspended at the mine two competent gentlemen should be sent down to inspect the mine, and report to a future meeting.

Several gentlemen expressed the opinion that there seemed to be plenty of stuff in and on the mine, and it would be a pity to relinquish the working till some independent reports had been received regarding the probable prospects of the future.

Capt. SOUTHEY, in reply to a question, said his principal hope was in the cross-cut. He held a considerable number of shares, and should be willing to pay his proportion of the expense of prosecuting the work.

On the motion of the CHAIRMAN, seconded by Mr. WEST, a resolution was passed to the effect that the mine be inspected by two competent authorities, and that their report be presented to a meeting to be convened on Wednesday, Dec. 14 next.—It was decided that Mr. J. Kendall and one other gentleman, to be selected by the committee, should be selected to thoroughly inspect the mine above and underground, and report upon the value of the halvas, &c.

A call of 5s. per share was then made, payable in two instalments, on Dec. 5

and Jan. 5, and a discount of 5 per cent. be allowed on all payments on or before those dates.—A vote of thanks to the Chairman closed the proceedings.

COTEHELE COMPANY.

The statutory meeting of shareholders was held at the offices of the company, Finsbury-circus, on Tuesday.

Mr. H. N. LAY in the chair.

Mr. F. F. WILSON (the secretary) read the notice convening the meeting.

The CHAIRMAN. I think I had better commence the proceedings by reading the directors' report, which is as follows:—Gentlemen, at this the first ordinary general meeting of the company the directors are glad to have it in their power to announce that since the issue of the prospectus further discoveries have been made more than confirmatory of its statements. Of the three lodes, the first has been opened out in the adit into a magnificent lode 10 ft. in width, composed of arsenical ore and copper with tin intermixed. The adit had been driven in the direction of this lode for a considerable distance, but the lode had been mixed by the previous explorers. A second lode has been found a little to the north, about 5 ft. in width, composed of copper, sulphur, fluorspar, and other mineral, and it is very promising in character. A narrow adit has been driven, we find, in the direction of this lode, which seems also to have been overlooked. Samples of ore from both lodes are laid upon the table, and attest their richness. So productive at surface these are little doubt that in depth they will increase in value. We are now engaged in the purchase of the requisite machinery for clearing the shaft, pumping the water and erecting stamps for the treating of the produce. There is very little on my part to add to this report, which places before you in a concise form the progress which has been made in your affairs. I believe I am within the mark in saying that for many years there has been no such discovery made in that neighbourhood—that of Calstock—as we have made at Cotehele. The first lode is an exceedingly good lode, and most productive for arsenic and copper; and the second lode, which is different in character from the first, is also extremely promising, and I am sure the shareholders are to be congratulated on the possession of so good a property. We hope in the course of a few months to be in a position to treat the ore which we are now working, and we are losing no time in negotiating for the purchase of an engine which shall crush and draw, and pump; because it is highly advisable that not a day should be lost in clearing the shaft and forking the water, inasmuch as the three lodes all have a southern underlay, and there is little doubt that we shall find them by sinking the shaft below its present depth—60 fms. I do not know that there is any other turning to which I should allude, beyond saying that no time shall be lost in turning the resources of the mine to account, with the view of an early distribution of dividend; but if there are any question which shareholders would like to put to me I shall be very happy to answer them.

Some very rich specimens were then exhibited, and the CHAIRMAN added that they had plenty of stuff, and only wanted the plant to treat it. He trusted that the shareholders will go down and see the property for themselves, for they could easily do so, and could go through the adit without any climbing. In a short time he would have some more samples taken and analysed.

Mr. KINNEAR: Do you propose to treat all the ore at Okel Tor?—The CHAIRMAN: Yes, until we get the necessary machinery up to treat it. We have a fine stream of water which we shall utilise for the water-wheel. He (the Chairman) added that Okel Tor was about a mile distant, and the stuff could be taken there by barge in about half-an-hour.

On the motion of the CHAIRMAN, seconded by Mr. F. F. WILSON, the directors' report was adopted.

A SHAREHOLDER: What quantity of stuff is now at surface?—The CHAIRMAN: About 300 tons, I should think; but I think we should suspend operations, except on one lode, until the stamps are up, as we have such a limited space for the stuff.

After some informal conversation the meeting closed, with the usual compliment to the Chairman.

GOGINAN SILVER-LEAD MINING COMPANY.

A meeting of shareholders was held at Aberystwith, on Tuesday, the mine, some seven miles distant, having first been visited to afford an opportunity to those disposed to do so to go underground, and to examine the machinery.—Mr. ROSS, F.G.S., in the chair.

The CHAIRMAN, in his opening address, said: The object of this statutory meeting I take more particularly to be that shareholders should assemble before directors for the purpose of thoroughly investigating everything that has been done, and seeing for themselves that the original promises held out are likely to be realised. Now we have to-day invited you to come down here to receive an account of our stewardship, and, moreover, we have invited several eminent mining authorities to meet you, and give you the results of their observations. Most notably among them was Mr. T. F. EVANS, formerly Government Inspector of Metalliferous Mines, upon whom he called for some observations.

Mr. EVANS said: I have no interest in the mine whatever; I am simply here as your adviser, and not for pay, or because I am peculiarly concerned in its success. Coming now to the more immediate fact—that of your taking possession of the mine. Remarks might be made as to why the late powerful company gave it up. There are not many miners, I presume, amongst you, and, therefore, I may be allowed to remind you of a proverb which exists from one end of Cornwall to the other—that it is "pare and pare" that make discoveries. The meaning of that is, that one gets discouraged and another comes in and reaps the benefit of his predecessor's labours, and so it may be in your case. This is said of the working tributer, and a mining company is a working tributer, only on a larger scale. You possibly are on the eve of making a discovery after the extensive explorations of your predecessors. I think it is so, and, I believe, judging from what I have seen, that there are great discoveries almost within your present reach. Judging from what I have seen to-day I find that you are prepared to do the work in a thoroughly good and efficient manner. In Wales we have rich metalliferous lodes, and we have the sturdy miner, who is willing to work for a small pay; but there is one thing wanting, and that is English capital. It is to such men as those I see around me that we appeal for that capital. Do you think that we as Welshmen, possessing ordinary common sense, would run to you and say—"Here is the ore ready for market." It is not likely. If we had it as ready as that we should not want your assistance at all, but mines require development; and then, when you come forward and assist, I believe you will find that the great majority of instances the balance of profit and loss will be on the right side, and I thoroughly believe that if you only vigorously work the mine you have now in hand, you will find a very profitable concern. I feel convinced that if you place thorough reliance in the local management, headed by Mr. Kitto (and I know you do this), that you will, in a very short time, have a return for the capital you have been willing to advance for the development of this great property.

Capt. PAUL, Senr.: I had the management of this mine for a good many years, and during some part of the time we have sent to market upwards of 200 tons a month, and given large profits. I know that you have an excellent property, and I believe that you will again get into the way to rich and profitable ground, and particularly in the western part of the mine.

Dr. ROWLANDS hoped and trusted that the new company would have a better mine than ever. There was once an old story about Goginan—he had heard it when he was a boy—that an old miner was reported to have said years ago he would undertake to carry all the lead in the mine in his waistcoat pocket; but after that there were 250 tons a month returned, and large dividends paid! The shareholders must not expect these returns too soon, but they must allow time to work the western ground.

Capt. NICHOLAS BRAY: Mr. Evans has said that there is plenty of ore above the bottom level, and Dr. Rowlands has said there is a great deal below it, and hence, by extending the levels and deepening the mine, there is almost a certainty of success. I can only endorse what I have heard Capt. Paul say as to the bottom of the mine.

The CHAIRMAN: After the statements that we have just heard made, I do not think we can be of any opinion other than this—that we have in the Goginan Mine an enterprise of very great promise. There are possibly one or two minor facts with regard to the mine that have not been placed before you, and, perhaps, this is the time when it will be as well to name them. He then proceeded to give a detailed history of the mine, and fully referred to the question of compensation.

Mr. JAMES JUDD, C.C., who delivered a very interesting address, said he wished to know from the chairman if the company had sufficient capital to enable this property to be worked, which, according to the opinion of all the experts present, offered such excellent prospects of success. Had they sufficient capital not only to drive the western ground, which was so likely to be valuable, but also any other part that experience might indicate as being advantageous to try? In other words, was their capital available for the purpose of developing possible treasures elsewhere? He wished also to inquire if any means existed of improving the transport from the mine to the point of embarkation. He was glad to find that all the responsible persons present had the courage of their convictions; and another thing that pleased him was the class and character of the men engaged in this particular enterprise.

Mr. HALFORD asked how long it would be before the patent rock drill was fully at work? How many fathoms of ground per week could be driven by the aid of this drill? Is the drill, to be used in the 27 fm. level, driving west of the western shaft?

Mr. KITTO remarked that there are many mines in Wales (and he referred more particularly to the counties of Montgomery and Cardigan, because he was best acquainted with them) that are lying waste, which if developed would show ten times as good a result as will be shown by these other mines. If but a small proportion of the capital were applied to them which has been sent to develop these foreign mines, it would give employment to the thousands that want it, and would help to fill the pockets of those who provided it. Mr. Kitto concluded by expressing his great indebtedness to his subordinates, and named specially Capt. Paul, jun., the resident agent.

Mr. HORACE WALKER had had no reason whatever to change his original belief of those connected with this mine. It had become rather confirmed than otherwise, and therefore, he took this opportunity of giving expression to his opinion simply as an outside shareholder, and as one who knew nothing of those present until he met them on this occasion. A more perfect knowledge had merely confirmed his first impressions, and the money he had embarked in this mine he left in the hands of the management with perfect confidence.

Capt. BONNELL said he really looked upon himself as a shareholder, and as one who had a certain venture in the prosperity of the concern. If this mine turned out as was expected it would be a great benefit to Welsh mining.

The CHAIRMAN, in reply to the questions asked, said that the capital was 12,000l., and that the whole of it was subscribed for in a week, and he believed it was ample for all requirements. With regard to improving the mode of transport, he could assure Mr. Judd that that was a question which the directors would not overlook, but it would be premature to take any steps in that direction at present. As to the dividends, he would be very much disappointed if they did not eventually get something very much in excess of 10 per cent.—in fact, three

times as much might be looked for if silver had regained its old price. The rock drills will be at work in another 14 days; we shall use them at every advantageous point.—The usual complimentary votes of thanks terminated the proceedings.

PROVINCIAL STOCK AND SHARE MARKETS.

CORNBISH MINE SHARE MARKET.—Mr. S. J. DAYEY, mine shareholder, Redruth (Nov. 24), writes:—The week began in our market with a strong demand for the dividend-paying mines, for Dolcoath in particular, and prices advanced; but later on sellers came forward, and the advance was in part lost. Market to-day is steady, but quiet. Dolcoaths advanced to 9½, East Pools to 45, South Condurrow to 11½, South Frances to 17½, Tincrofts to 20½, Agars to 15, Grenvilles to 13, and West Peavors to 16. At Carn Brea meeting to-day a 10s. dividend was declared. Tin standards remain without alteration. Prices are as follows:—Blue Hills, 2½ to 2½; Carn Brea, 25½ to 26, x. d.; Cook's Kitchen, 27½ to 28½; Dolcoath, 9½ to 9½; East Pool, 43½ to 44½; East Brea Hills, ½ to ½; East Lovell, 3 to 3½; Killifreth, 32s. to 33s.; Mellanear, 4½ to 5; New Cook's Kitchen, 5 to 5½; New Kitty, 1½ to 2; North Busy, ½ to ½; North Penrathall, ½ to ½; Phoenix, ½ to ½; Pedn-an-drea, ½ to ½; South Condurrow, 11½ to 11½; South Crofty, 9½ to 10½; South Frances, 17½ to 17½; South Tolcarne, 2 to 2½; Tincroft, 19½ to 20½; West Basset, 14½ to 14½; West Frances, 18½ to 18½; West Kitty, 8½ to 9; West Peavor, 14½ to 15½; West Poldice, 6 to 6½; West Tolgus, 15 to 15½; West Seton, 14 to 15; West Godolphin, 1½ to 2; West Polbreen, 1½ to 1½; Wheal Agar, 14½ to 15½; Wheal Basset, 5½ to 5½; Wheal Comfort, 2½ to 2½; Wheal Grenville, 12½ to 12½; Wheal Jane, 27s. to 27s.; Wheal Peavor, 13 to 13½; Wheal Prussia, 1½ to 1½; Wheal Sisters, 2 to 2½; Wheal Jewell, ½ to ½; Wheal Uny, 3½ to 4.

—Mr. J. H. REYNOLDS, stock and share broker, Redruth (Nov. 24), writes:—The share market for the past week has been altogether quiet. At Carn Brea meeting to-day a dividend of 10s. was declared. Subjoined are the closing prices:—Blue Hills, 2 to 2½; Carn Brea, 25½ to 26½, x. d.; Camborne Vein, 10s. to 12s. 6d.; Cook's Kitchen, 28 to 29; Dolcoath, 9½ to 9½; East Pool, 43 to 44½; East Brea Hills, 10s. to 12s. 6d.; Killifreth, 1½ to 1½; Marke Valley, 10 to 10½; Mellanear, 4½ to 5; New Cook's Kitchen, 5 to 5½; New Kitty, 1½ to 2; North Busy, ½ to ½; North Herodsfoot, 10s. to 12s. 6d.; North Penrathall, ½ to ½; Pedn-an-drea, 3½ to 3½; Phoenix, 3½ to 4; Penhal, 1½ to 1½; South Condurrow, 11½ to 11½; South Crofty, 10 to 10½; South Frances, 17 to 17½; South Tolcarne, 2 to 2½; Tincroft, 19½ to 19½; West Basset, 14½ to 14½; West Frances, 19 to 19½; West Kitty, 8½ to 9; West Peavor, 15 to 15½; West Polbreen, 1½ to 1½; West Poldice, 6 to 6½; West Seton, 18 to 18½; West Tolgus, 30 to 35; Wheal Agar, 14½ to 15½; Wheal Basset, 5½ to 5½; Wheal Boys, 2½ to 2½; Wheal Grenville, 12 to 12½; Wheal Honey and Trelawny, 2½ to 2½; Wheal Jewell, ½ to ½; Wheal Kitty, ½ to ½; Wheal Peavor, 12½ to 13½; Wheal Prussia, 1½ to 1½; Wheal Uny, 3½ to 4; Wheal Jane, 1½ to 1½.

—Messrs. ABBOTT and WICKETT, stock and share brokers, Redruth (Nov. 24), writes:—In the past week a large business has been done in the leading mines, and prices have varied considerably, but do not close at their best. 10s. dividend at Carn Brea to-day. Quotations annexed:—Blue Hills, 2 to 2½; Carn Brea, 25½ to 26½, x. d.; Cook's Kitchen, 27½ to 28½; Dolcoath, 9½ to 9½; East Pool, 43½ to 44½; Killifreth, 1½ to 1½; New Cook's Kitchen, 5 to 5½; North Busy, ½ to 1; Pedn-an-drea, 3½ to 3½; Santa Gertrude, 170 to 175; South Caradon, 50 to 60; South Condurrow, 11½ to 12; South Crofty, 9½ to 10; South Frances, 17 to 17½; Tincroft, 18½ to 19; West Basset, 14½ to 14½; West Kitty, 8½ to 9½; West Poldice, 6 to 6½; West Peavor, 14½ to 15; West Frances, 18½ to 19½; West Seton, 15 to 16; Wheal Agar, 14½ to 15; Wheal Basset, 5½ to 5½; Wheal Grenville, 12 to 12½; Wheal Jane, 1½ to 1½; Wheal Peavor, 13 to 13½; Wheal Prussia, 1½ to 1½; Wheal Uny, 3½ to 4; West Poldice, 1½ to 1½; West Tolgus, 27 to 30.

—Mr. M. W. HAWDEN, Liskeard (Nov. 24), writes:—The mining market at the close of last week was exceedingly active, and tin having slightly receded in view of the approaching Banca sale, and most shares are being offered at lower rates. Subjoined are the closing prices:—Bedford United, 1½ to 1½; Carn Brea, 27½ to 28, x. d.; Cook's Kitchen, 28 to 28½; Dolcoath, 9½ to 9½; Devon Consols, 6½ to 7; East Caradon, 5½ to 5½; East Herodsfoot, 1 to 1½; East Lovell, 3 to 3½; East Pool, 43 to 43½; Gawton (United), ½ to ½; Glasgow Caradon, 3 to 3½; Gunnissale (Clitters), 3½ to 4; Herodsfoot, ½ to ½; Hingston Down, 1½ to 1½; Killifreth, 1½ to 1½; Marke Valley, 10 to 10½; New West Caradon, 1½ to 1½; North Herodsfoot, ½ to ½; Old Gunnissale, ½ to ½; Phoenix United, 4 to 4½; Prince of Wales, ½ to ½; South Caradon, 42½ to 45; South Crofty, 10½ to 11½; South Frances, 17 to 17½; South Tolcarne, 1 to 1½; South Devon United, 1½ to 1½; South Frances, 17 to 17½; Tincroft, 20 to 20½; West Basset, 15 to 15½; West Caradon, 3½ to 3½; West Mary Ann, 1 to 1½; West Peavor, 14½ to 15; West Phoenix, 1½ to 1½; West Trebor, 3 to 3½; Wheal Agar, 15 to 15½; Wheal Basset, 5½ to 6; Wheal Crebor, 3 to 3½; Wheal Grenville, 13 to 13½, c. d.; Wheal Honey and Trelawny, 2½ to 2½; Wheal Jane, 1½ to 1½; Wheal Peavor, 13½ to 14; Wheal Uny, 4 to 4½. At South Caradon meeting on Tuesday last the accounts showed a loss on the three months' working of 177l. 12s. 2d.

—Mr. JOHN CARTER, mine shareholder, Camborne (Nov. 24), writes:—Early in the week our market was active, and prices of the leading tin mines advanced, but again quickly gave way. Dolcoath's declining to 9½, 9½, and East Pools to 44. South Frances advanced to 17½ to 18, but have since declined to 17, 17½. At Carn Brea meeting held on this day a profit of 2500l. was shown on the 16 weeks' workings, and a dividend of 10s. per share (3000l.) declared. This was rather disappointing, and shares have declined to 25 sellers. There is no change in the tin standards this week. Closing prices annexed:—Carn Brea, 25½ to 26, x. d.; Cook's Kitchen, 27 to 28; Dolcoath, 9½ to 9½; East Pool, 43½ to 44; East Brea Hills, ½ to ½; Mellanear, 4½ to 4½; New Cook's Kitchen, 5 to 5½; New Kitty, 1½ to 2; North Busy, ½ to ½; Pedn-an-drea, 3½ to 3½; South Caradon, 50 to 55; South Condurrow, 11½ to 11½; South Crofty, 10 to 10½; South Frances, 17 to 17½; Tincroft, 19½ to 19½; West Basset, 14 to 14½; West Frances, 18½ to 19½; West Peavor, 14½ to 15; West Poldice, 6 to 6½; West Seton, 14 to 15; West Tolgus, 27 to 28; Wheal Agar, 14½ to 15½; Wheal Basset, 5½ to 5½; Wheal Grenville, 12½ to 12½; Wheal Peavor, 13 to 13½; Wheal Kitty, ½ to ½; Wheal Jane, 27s. to 27s.; Wheal Uny, 3½ to 4; West Kitty, 8½ to 9.

MANCHESTER.—Messrs. JOSEPH R. and W. P. BAINES, sharebrokers, Queen's Chambers, Market-street (Nov. 24), write:—Hardening tendencies of money have had a depressing effect on speculative stocks, but whilst curtailing opportunities for speculation, evincing as they do a better state of things in commercial channels for capital, the effect is somewhat counterbalanced by the feeling that with better trade present figures may be considered to be justified by intrinsic value, apart from the whole of the market may be described as the merest trifle under best touched, there is a apprehension of any serious falling off in rates (the case, if such it may be called) amounting only to a slight lull, from which may very probably spring a fresh upward movement.

BANKS.—Not many lots have changed hands during the week, but figures obtained show steadiness to prevail, whilst the changes in quotations tell more emphatically the same tale. Higher—National Provincial (n), ½; Manchester and County, ½; Parr's, ½; and Bank of Liverpool, ½. Lower—Manchester and Salford, ½.

INSURANCE are quieter, with few transactions reported, and lower figures obtained on interchanges. Quotations, which are altered to some extent, exhibit a distinct adverse movement, for while the changes for the better are few and unimportant those showing decline are in majority, and of more moment. Higher—British and Foreign Marine, ¼; Equitable Fire, ¼; Thames and Mersey Marine, ¼; and Underwriter's Association, ¼. Lower—Royal (Liverpool), ¼; Maritime, ¼; Liverpool and London and Globe, ¼; Lancashire and Yorkshire Accidental Insurance, ¼; Queen, ½; Manchester Fire, ¼; and British Re-insurance, ¼.

COAL, IRON, &c., AND MINING.—A somewhat uncertain position is presented by the alterations in figures to be noticed as compared with prices ruling a week ago, still the tone generally is in favour of advance, the adverse movements, except a distinct adverse movement, for while the changes for the better are few and unimportant those showing decline are in majority, and of more moment. Higher—British and Foreign Marine, ¼; Equitable Fire, ¼; Thames and Mersey Marine, ¼; and Underwriter's Association, ¼. Lower—Royal (Liverpool), ¼; Maritime, ¼; Liverpool and London and Globe, ¼; Lancashire and Yorkshire Accidental Insurance, ¼; Queen, ½; Manchester Fire, ¼; and British Re-insurance, ¼.

COTTON SPINNING AND MANUFACTURING. Full prices have ruled, and fresh progress has been made chiefly amongst shares at long discounts. Some little disposition is apparent to realise profits, but this is only at top prices, and as buyers follow prices fairly no weakness is discernible.—TELEGRAPHS AND TELEPHONES: Little doing; quotations changed as follow:—Higher: Anglo, ordinary, ¼; Direct United States Cable, ¼; and Lancashire and Cheshire Telephone, 3.—Lower: Anglo, deferred, ¼; ditto, preferred, ¼.—CANALS: Rather more dealings marked, and the only change in prices is rise of ¼ in Lancashire.—CORPORATION STOCKS, &c.: Neglected, but prices unchanged. MISCELLANEOUS: Show majority of favourable changes, but not many lots changing hands.—RAILWAYS: The activity displayed during the past few weeks has this week been followed by a general absence of business, and a decline in the value of all securities. The sharp fall of the last few days is consequent on an impression prevailing of the likelihood of a lighter money market, and this was somewhat confirmed yesterday by the large withdrawal of gold, and prices were flat early on, and continued with a desultory tone until Bank return was announced this afternoon, showing 170,000l. paid in, and 1 per cent. better, when a general rally took place, and values are distinctly better; the "heavy" and Scotch lines being enquired for the most. In Canadians a sharp rise occurred on Monday in Great Western on the small decrease in their traffic, but they have since relapsed, and to-day Grand Trunk's issues have suffered heavily through their traffic announcement being 4504 decrease. On the week (the chief reduction having taken place to-day) first preferences are 2; second preference, 1; and third preference, 1½; also the ordinary, ½ all lower. Their monthly statement is anxiously looked for, and the dividend on their second preference is now expected to be only a nominal one, as with such heavy decreases as may now be ascertained, the chances of anything near a full half year's dividends are very small. Americans have been a drooping mortal all week, and only show a little better tone this evening, on the

[The Author reserves the right of reproduction.]

* Von Hauer. Die Fördermaschinen der Bergwerke, p. 75.

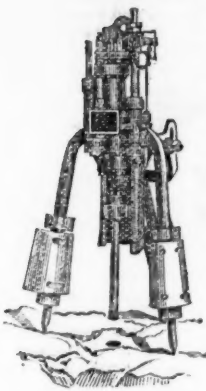
And sizes up to No. 10 kept in stock.

PUMPS OF EVERY DESCRIPTION.
WINDING AND HAULING ENGINES.
BOILERS, Vertical, Multitubular, and Lancashire.
BOILERS, for Burning Rough Fuel.
FILTERING MACHINERY, for Large Quantities of
Dirty Water

PUMPING AND WINDING ENGINE.

(2)

THE "BEAUMONT" PATENT PERCUSSIVE ROCK DRILL



(BEAUMONT AND FOSTER'S PATENT.)

The "BEAUMONT" DRILL is now offered to the public.

For the last three years it has been solely used with complete success by the Aqueous Works and Diamond Rock Boring Company (Limited), and Messrs. Beaumont and Co in their several large contracts.

During this time it has been so improved and developed as to make it without doubt the best Percussive Rock Drill offered for Tunnelling, Mining, or Quarrying Work.

Price and prospectus on application to the Manufacturer,—

JOSEPH FOSTER,
MINING ENGINEER

BOW LANE IRONWORKS
PRESTON, LANCASHIRE.

THE AQUEOUS WORKS AND DIAMOND ROCK-BORING COMPANY (LIMITED).

CROWN WORKS, GUILDFORD STREET, YORK ROAD
LAMBETH, LONDON.

Messrs. BEAUMONT AND CO.,

3, VICTORIA STREET, S.W., WESTMINSTER, LONDON.

Tripods, Tunnelling Carriages, Gadding Cars, Air Compressors, Air Pipes, and other Mining Machinery supplied.

"KING AND HUMBLE'S" PATENT DETACHING HOOK

To prevent over winding

PATENT SAFETY CAGE,
To suspend in Shaft in cases of fracture of Winding Rope,

Winding and Hauling Engines,
Special Centrifugal Pumps,
Weighing Machines, Ore Crushers,
Steel Castings, Mining Steel and Tools,
Winches, Steel Shovels, Pulleys,
Mining Machinery of every description.
Brick Machinery and Mortar Mills.

Stephen Humble, Engineer, Derby.

W. F. STANLEY

MATHEMATICAL INSTRUMENT MANUFACTURER TO H.M.'S
GOVERNMENT, COUNCIL OF INDIA, SCIENCE AND
ART DEPARTMENT, ADMIRALTY, &c.

MATHEMATICAL, DRAWING, and SURVEYING INSTRUMENTS of every
description, of the highest quality and finish, at the most moderate prices.
Price List post free.

ENGINE DIVIDER TO THE TRADE.
ADDRESS—GREAT TURNSTILE, HOLBORN, LONDON, W.C.

JOSEPH RICHARDS, M.E.,

Late of the Devon Great Consols, England. Late Mineral Agent for the Earl
Fortescue, England. Thirty-one years' experience; eleven years
on the Pacific Coast.

JOHN TREGLOAN, M.E.,

Forty years' practical experience in England and the United States.
CONSULTING AGENTS AND ENGINEERS

TO
**THE PACIFIC COAST MINE AGENCY AND
MINING PROTECTIVE ASSOCIATION,**

22, GEARY STREET (ROOM 11),
SAN FRANCISCO, CAL.

Mines examined (in any part of the World) and faithfully reported. The general
Management of Mines undertaken.

TERMS FURNISHED ON APPLICATION.
Information given as to the status of any Mine on the Pacific Coast as soon
after enquiry as possible. Fee for ordinary enquiry, Ten Guineas.

MINING ENGINEER.

ALEX. DEL MAR,

Mining Engineer, late Director of the United States Bureau of Statistics, Mining
Commissioner for the United States Monetary Commission, &c., 216, SANSOME
STREET, SAN FRANCISCO: Cable address—"Delmar, San Francisco." Branch
Office, 61, Broadway, New York: Cable address—"Delmar, New York." London
Agency, H. Stokes and Co., 24A, Southwark-street, S.E.: Cable address—"Delmar,
London." Paris Agency, J. H. McDonald and Co., 13, Rue St. Lazare:
Cable address—"Delmar, Paris."

MR. P. S. HAMILTON (late Chief Commissioner of Mines for
the Province of Nova Scotia), PRACTICAL GEOLOGIST, MINING
AGENT, and MINING ENGINEER, HALIFAX, NOVA SCOTIA.
PURCHASES and SALES of MINING PROPERTY effected, with careful re-
gard to the interests of clients.

SOUTH AUSTRALIAN MINES.—J. B. AUSTIN, ADELAIDE
S. (Author of "The Mines and Minerals of South Australia," MINING AND
GENERAL COMMISSIONER AGENT, has on hand several GOOD MINING PRO-
PERTIES, in whole or in part—GOLD, SILVER, GALENA, COPPER, BIS-
MUTH, ASBESTOS, MANGANESE, &c., &c.—offering good investment for Eng-
lish Capital.
References: A. L. ELDER, Esq., Bishopsgate-street; A. J. SCRUTTON, Esq.,
Stock Exchange; and Editor of the MINING JOURNAL, London.

68, HUNTER STREET, SYDNEY.

**FRANCIS AND RICHARDS, CIVIL AND MINING
ENGINEERS AND SURVEYORS.**

Colonial Mining Properties, Metals or Minerals examined or reported on.
Terms moderate.
References in England: Messrs. JOSEPH MATTHEWS and Co., Engineers and
Ironfounders, Tavistock, Devon.

THE IRON AND COAL TRADES REVIEW.
The IRON AND COAL TRADES' REVIEW is extensively circulated amongst the
Iron Producers, Manufacturers, and Consumers, Coalowners, &c., in all the iron
and coal districts. It is, therefore, one of the leading organs for advertising every
description of Iron Manufactures, Machinery, New Inventions, and all matters
relating to the Iron Coal, Hardware, Engineering, and Metal Trades in general.
Offices of the Review: 7, Westminster Chambers, S.W.
Remittances payable to W. T. Pringle.

The Only Knapping Motion Stone Breaker and Ore Crusher.

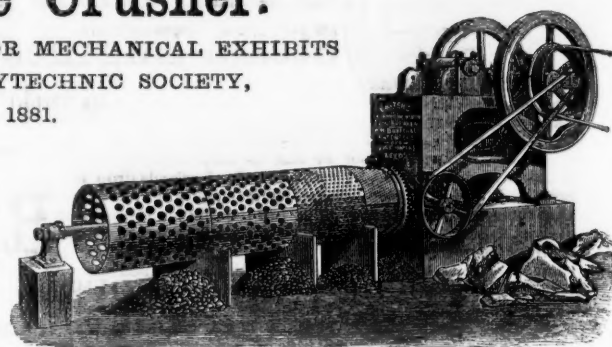
AWARDED THE ONLY SILVER MEDAL FOR MECHANICAL EXHIBITS
AT THE ROYAL CORNWALL POLYTECHNIC SOCIETY,
FALMOUTH, SEPT., 1881.

READ THIS—

Enderby Granite Quarry, Sept. 23, 1881.

SIR,—In answer to your enquiry respecting your 12 by 8 Stone
Breaker, we break on an average 60 tons of stone per day. The
percentage in chippings and dust is under 10 per cent., which we
consider is extremely small, considering the size we break our
stone to, the machine making 60 per cent. X X, or 1 1/2. The
driving shaft never gets hot. We can work it the ten hours
without stopping.

Yours truly,
RAWSON AND RAWSON.



These Machines turn out the same amount of work with less than half the power, and make a better sample of Road Metal, with 50
per cent. less waste, than any other machinery, and for Crushing Purposes they are still more advantageous, as the sudden action en-
tirely dispenses with the clogging when used for crushing softer materials, and thereby saves many breakages and a great waste of
power. There is also a saving of fully 75 per cent. of lubrication required over the Blake Machine, and as a proof of this, our driving
shaft never becomes heated. We are also prepared to guarantee our driving shaft from breakage in any of our Knapping Motion
Stone Breakers.

We have already supplied our Machines to Derby, Harrogate, and Falmouth Local Authorities; besides several Quarry Owners,
Contractors, Plaster Manufacturers, &c.

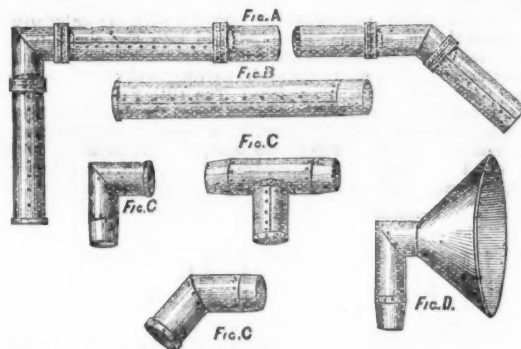
FOR FULL PARTICULARS ADDRESS TO THE PATENTEES AND SOLE MAKERS,

W. H. BAXTER & CO., ALBION STREET, LEEDS.

COLLIERY VENTILATING TUBES.

WILLIAM THOMPSON,

MANUFACTURER OF



**COLLIERY VENTILATION TUBES. Mines, &c. General
Sheet Iron Worker.**

Fig. A.—Shows the tubes adapted for any variation in direction.
Fig. B.—Straight length of tube.
Fig. C.—Different angle bends.
Fig. D.—Is a hopper to receive air at top of shaft.

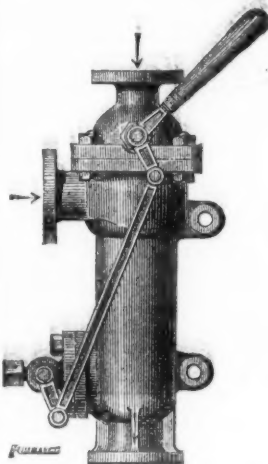
Highfield Works, Eттingshall, near WOLVERHAMPTON.

KÖRTING BROS.,

ENGINEERS,

17, LANCASTER AVENUE, FENNEL STREET,
MANCHESTER.

**E. KÖRTING'S PATENT
UNIVERSAL INJECTOR.**



Works equally well non-lifting or lifting.

Can be made to lift 24 feet.

Works with high or low steam-pressure.

Works with hot or cold water.

Forces the water in the boiler considerably above boiling point,
thereby increasing the durability of the boiler.

Is started by simply turning one lever.

REFERENCES, TESTIMONIALS, AND PRICE LISTS ON APPLICATION

ALEX. CHAPLIN AND CO.,

CRANSTONHILL ENGINE WORKS, GLASGOW.

PATENTEES AND SOLE MANUFACTURERS OF

CHAPLINS' PATENT STEAM CRANES, HOISTS,

LOCOMOTIVES, AND OTHER ENGINES AND BOILERS

LONDON HOUSE:—

No 63 QUEEN VICTORIA STREET, LONDON.

SILVER MEDALS AWARDED AT CORNWALL POLYTECHNIC
1872 AND 1876.

**THE WELL-KNOWN PATENT SELF-ACTING ORE
DRESSING MACHINERY**, as in operation at most of the
large Mines in the Kingdom and Abroad, is now supplied solely by
THE PATENTEES AND MANUFACTURER, Mr. GEORGE GREEN,
Mining Engineer, AT GREATLY REDUCED PRICES also all
descriptions of Mining Machinery, including
GOLD AND SILVER AMALGAMATING MACHINERY complete
Stamp Mills, Water Wheels, Steam Engines, &c.
ROLLER SHELLS FOR CRUSHING MILLS—a speciality.

SPECIAL DESIGNS FOR EXPORT AND DIFFICULT TRANSIT.

Prices and particulars on application to the Manufactory,
ABERYSTWTH, SOUTH WALES.

**ALEXANDER SMITH, M. Inst. C.E., CONSULTING
ENGINEER and VALUER OF IRONWORKS,
MINING, RAILWAY, ENGINEERING, and other PROPERTY,
PLANT, and MACHINERY,
1, PRIORY STREET, DUDLEY**

Mr. SMITH has been retained for nearly 20 years by some of
the most prominent firms, and has conducted many of the largest
valuations that have taken place in the kingdom

Valuations for Stock Taking or any other purpose upon very
reasonable terms.

SPARGO'S GUIDE TO INVESTMENT.
THE GUIDE FOR NOVEMBER contains full and authentic information
on the present condition and the immediate prospect of all British Mines, to-
gether with trustworthy directions as to investment both in Progressive and
Dividend Paying Mines.
Price 6d. post free.
CROWN COURT, THREADNEEDLE-STREET, LONDON, E.C.

**CAPTAIN ABSALOM FRANCIS, M.E.
GOGINAN, ABERYSTWTH**

MONEY LENT, at EIGHT, NINE, and TEN PER CENT., on
FIRST MORTGAGE of FREEHOLDS for IMPROVEMENTS and
STOCKING, said freeholds in the Province of MANITOBA.
Address, HERBERT C. JONES, Solicitor, 20 Masonic Hall, Toronto.



PARIS EXHIBITION, 1878.

GOLD AND SILVER MEDALS AWARDED for
Steam-Engines & Boilers, also the Special Steam Pump,
and Compound Pumping Engine.

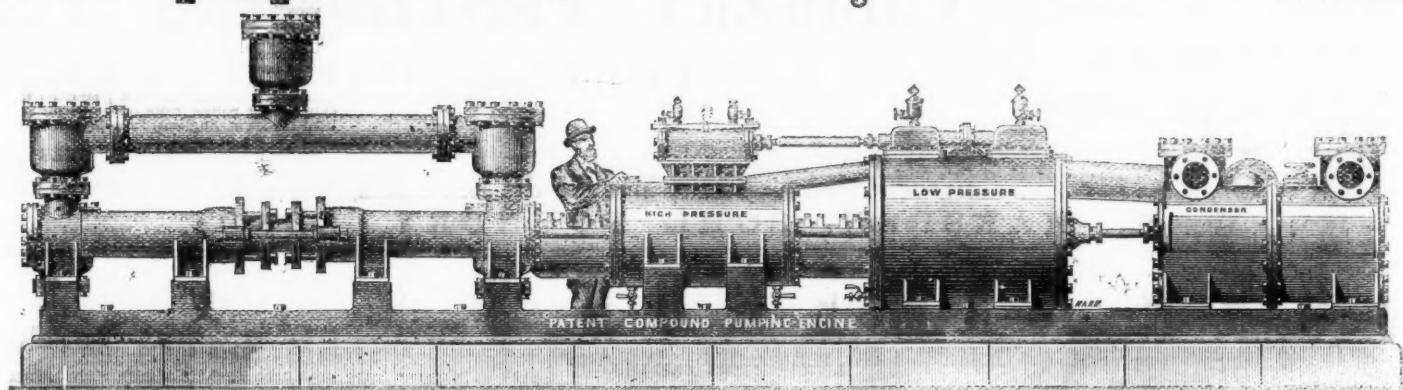


TANGYE BROTHERS AND HOLMAN,

CORNWALL HOUSE, 35, QUEEN VICTORIA STREET, LONDON, E.C.,
AND BIRMINGHAM, (TANGYE BROTHERS), CORNWALL WORKS, SOHO.

TANGYE'S DIRECT-ACTING
COMPOUND PUMPING ENGINE,

For use in Mines, Water Works, Sewage Works,
And all purposes where Economy of Fuel is essential.



TANGYE'S DIRECT-ACTING COMPOUND PUMPING ENGINE, WITH AIR-PUMP CONDENSER.

TANGYE'S COMPOUND PUMPING ENGINE COMBINES SIMPLICITY, CERTAINTY OF ACTION, GREAT ECONOMY
IN WORKING, COMPACTNESS, AND MODERATE FIRST COST.

This Engine will be found the most simple and economical appliance for Mine Draining, Town Water Supply, and General Purposes of Pumping ever introduced, and as regards Mine Draining, the first cost is very moderate compared with the method of raising water from great depths by a series of 40 or 50 fm. lifts. No costly engine-houses or massive foundations, no repetition of plunger lifts, ponderous connecting rods, or complication of pitwork, are required, while they allow a clear shaft for hauling purposes. In this Engine the economical advantages resulting from the expansion and condensation of steam are very simply and effectively obtained. The steam after leaving the high-pressure cylinder is received into and expanded in the low-pressure cylinder, and is thus used twice over before being exhausted into the condenser or atmosphere.

The following first-class Testimonials will bear evidence as to the efficiency and economy of the Engine:—

TESTIMONIALS OF TANGYE'S COMPOUND PUMPING ENGINE.

21 Newcastle and Gateshead Water Company, Newcastle-on-Tyne, Oct. 20, 1879
36 x 10 x 48" COMPOUND CONDENSING STEAM PUMPING ENGINE.

Messrs. Tangye Brothers.
GENTLEMEN,—In reply to your enquiry as to the efficiency of the two pairs of Compound Condensing Engines recently erected by you for this company at our Gateshead Pumping Station, I have great pleasure in informing you that they have far surpassed my expectations, being capable of pumping 50 per cent. more water than the quantity contracted for; and by a series of experiments I find they work as economically as any other engine of the compound type, and will compare favourably with any other class of pumping engine. By the simplicity of their arrangement and superior workmanship they require very little attendance and repairs, and the pumps are quite noiseless. A short time ago I had them tried upon air by suddenly shutting off the column, and found they did not run away, thus showing the perfect controlling or governing power of the Floyd's Improved Steam-moved Reversing Valve. I will thank you to forward the other two as you have in hand for our Benwell Pumping Station.

(Signed)

Yours respectfully,
JOHN R. FORSTER, Engineer.

21"

36 x 12" x 48" DOUBLE RAM COMPOUND CONDENSING STEAM PUMPING ENGINES
Messrs. Tangye Brothers. Supplied in January, 1878.

GENTLEMEN,—Referring to the above, which we have now had working continuously night and day for the last 12 months, we are glad to say that it is giving us every satisfaction. It is fixed about 400 feet below the surface, the steam being taken down to it at pressure of 45 lbs. per square inch. We can work the pump without any difficulty at 28 strokes per minute—224 ft. piston speed. The pumping power is enormous. The vacuum in the condenser being from 11½ to 13 lbs. The pump is easily started, and works well and regularly. The amount of steam taken being much less than we anticipated. We consider the economy in working very satisfactory indeed. The desire for power and economy at the present day will certainly bring this pump into great requisition.

Yours truly,
(Signed)

M. STRAW, Manager

SIZES AND PARTICULARS.

Diameter of High-pressure Cylinder.....In.	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
Ditto of Low-pressure Cylinder.....In.	14	14	14	18	18	18	18	21	21	21	21	24	24	24	24
Ditto of Water Cylinder.....In.	4	5	6	5	6	7	8	6	7	8	10	7	8	10	12
Length of stroke.....In.	24	24	24	24	24	24	24	24	24	24	24	36	36	36	36
Gallons per hour approximate.....	3900	6100	8800	6100	8800	12,000	15,650	8,800	12,000	15,650	24,450	12,000	15,650	24,450	35,225
Height in feet water can be raised with 40 lbs. pressure per square inch in } Non-condensing...	360	330	160	360	250	184	140	360	264	202	130	360	275	175	122
Ditto ditto ditto—with Holman's Condenser...	480	307	213	480	333	245	187	480	352	269	173	480	367	234	162
Ditto ditto ditto—with Air-pump Condenser...	600	384	267	600	417	306	335	600	440	337	216	600	459	203	205

CONTINUED.

Diameter of High-pressure Cylinder.....In.	16	16	16	16	18	18	18	18	21	21	21	24	24	24	30	30
Ditto of Low-pressure Cylinder.....In.	28	28	28	28	32	32	32	32	36	36	36	42	42	42	52	52
Ditto of Water Cylinder.....In.	8	10	12	14	8	10	12	14	10	12	14	10	12	14	12	14
Length of stroke.....In.	36	36	36	36	48	48	48	48	48	48	48	48	48	48	48	48
Gallons per hour approximate.....	15,650	24,450	35,225	47,950	13,650	24,450	35,225	47,950	24,450	35,225	47,950	24,450	35,225	47,950	35,225	47,950
Height in feet water can be raised with 40 lbs. pressure per square inch in } Non-condensing...	360	230	160	118	456	292	202	149	397	276	202	518	360	264	562	41
Ditto ditto ditto—with Holman's Condenser...	480	307	213	154	603	389	269	198	528	363	269	691	480	352	750	550
Ditto ditto ditto—with Air-pump Condenser...	600	384	267	191	750	486	337	248	660	450	337	804	600	440	937	689

PRICES GIVEN ON RECEIPT OF REQUIREMENTS.

Any number of these Engines can be placed side by side, to work in conjunction or separately as desired, thereby multiplying the work one Pump to any extent.

NORTHERN DEPOT:—TANGYE BROTHERS, ST. NICHOLAS BUILDINGS NEWCASTLE-ON-TYNE.

INFRINGEMENTS.—H. R. MARSDEN having obtained information of infringements of his numerous Patents, hereby gives notice that he will PROCEED AGAINST ANY ONE HE MAY DISCOVER MAKING OR USING THE SAME.

PARIS EXHIBITION, 1878. GAINED THE GRAND PRIZE. THE TRIPLE AWARD. Gold Medal, Silver Medal, and Honourable Mention in competition with all the World.

THE BLAKE-MARSDEN NEW PATENT IMPROVED STONE BREAKERS AND ORE CRUSHERS.

ORIGINAL PATENTEE
AND ONLY MAKER.

H. R. MARSDEN, NEW PATENT FINE CRUSHER OR PULVERIZER,

ALSO PATENTEE AND ONLY
MAKER OF THE

FOR REDUCING TO AN IMPALPABLE POWDER, OR ANY DEGREE OF FINENESS REQUIRED,

GOLD AND SILVER QUARTZ, COPPER, TIN, ZINC, LEAD,

AND ORES OF EVERY DESCRIPTION;

Also Cement, Barytes, Limestone, Chalk, Pyrites, Coprolite, &c., &c. Several are already in successful operation in this country and abroad, and reference to users can be had on application.

NEW PATENT REVERSIBLE CUBING and CRUSHING
JAWS, IN FOUR SECTIONS,
WITH PATENT FACED BACKS, REQUIRING
NO WHITE METAL IN FIXING.

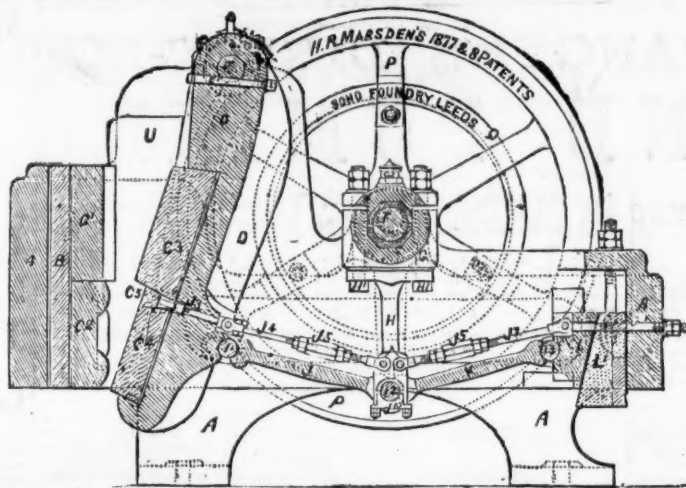
NEW PATENT TOGGLES.

NEW PATENT CRUCIBLE CAST-STEEL CONNECTING
RODS.
NEW PATENT WROUGHT-IRON CONNECTING RODS.
NEW PATENT RENEWABLE TOGGLE CUSHIONS, &c.

OVER 4000 IN USE.

EXTRACT FROM TESTIMONIALS.
PULVERISER.

"I have great pleasure in bearing testimony to the merits and capabilities of your patent combined fine crusher and sieving apparatus. I have tried it on a variety of ores and minerals, and it pulverizes them with equal success. You can put in a small paving stone, and bring it out like flour."
"The power required to drive it is very small, being from 4 to 5-horse, and the repairs are almost nil."



AWARDED OVER

60

FIRST-CLASS GOLD AND SILVER MEDALS.

ADOPTED BY THE PRINCIPAL CORPORATIONS, CONTRACTORS, MINING COMPANIES, &c., IN ALL PARTS OF THE WORLD.

ROAD METAL BROKEN EQUAL TO HAND, AT ONE-TENTH THE COST.

EXTRACTS FROM TESTIMONIALS.
STONEBREAKER.

"The 15 x 8 stonebreaker gives perfect satisfaction. It produces a more cubical stone than any others I have seen at work."
"Your 15 x 16 machine makes the best road metal I have ever seen put through a machine—in fact, comparing favourably with hand-broken."

"Your 10 x 7 crusher at the Aruba Gold Mines will crush 90 to 100 tons per 24 hours of the hardest gold quartz to 1' size."
"Some of your testimonials do not give your machines half their due. I have seen men hammering away on a big rock for a quarter of a day which your machine would reduce to the required size in a quarter of a minute. I would guarantee that your largest size machine would reduce more of the Cornish tin capels (which is the hardest rock of England) in a day than 200 men, and at 1-25th the cost."

GREATLY REDUCED PRICES ON APPLICATION.

FOR CATALOGUES, TESTIMONIALS, &c., APPLY TO THE SOLE MAKER,

H. R. MARSDEN, SOHO FOUNDRY, LEEDS.

JOHN CAMERON'S

FLY-WHEELS ON BOTH SIDES.

SPECIALITIES ARE HIS

STEAM PUMPS

FOR

COLLIERY PURPOSES,

Specially adapted for forcing Water any height;

ALSO, FOR

**SINKING, FEEDING BOILERS AND STEAM
FIRE ENGINES,**

Of which he has made over 8000.

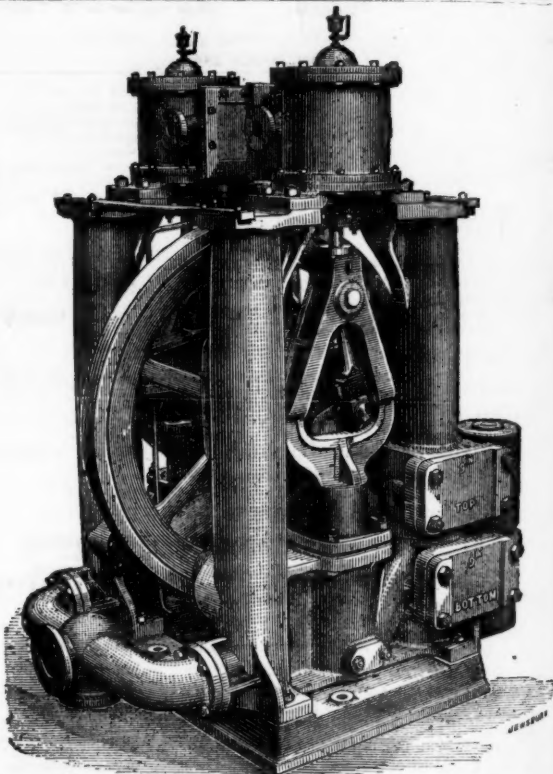
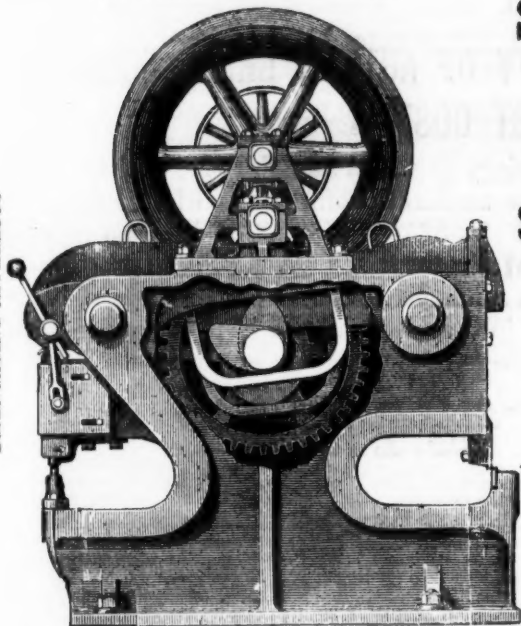
ALSO, HIS

PATENT CAM AND LEVER

PUNCHING AND SHEARING MACHINES.

Works: Oldfield Road, Salford,
Manchester.

DISENGAGING APPARATUS



HULME & LUNDS SPECIALITIES.
DONKEY PUMPS, MINING PUMPS,
HORIZONTAL PUMPS, TAR PUMPS,
AIR COMPRESSORS,
FIRE ENGINES, STEAM ENGINES,
WILBURN IRON WORKS
SALFORD, MANCHESTER.

MAPS OF THE MINES, AND OF UTAH TERRITORY

FROISETH'S NEW AND REVISED MAP FOR 1875.—Size 40 by 56 inches, scale 8 miles to the inch. Handsomely engraved, coloured in counties, showing the Towns, Settlements, Rivers, Lakes, Railroads, Mining Districts, &c., throughout the Territory, and all the Government Survey to date. Mounted on cloth, £2; half-mounted, £1 12s.; pocket form, £1.

Also, GENERAL MINING MAP OF UTAH, showing twenty-eight of the principal Mining Districts adjacent to Salt Lake City, and location of the most prominent mines. Price, pocket form, 6s.

Also, NEW MAP OF LITTLE AND BIG COTTONWOOD MINING DISTRICTS showing the location of over Four Hundred Mines and Tunnel Sites, together with the Mines Surveyed for United States Patent. Price, sheets, 6s.; pocket form, 6s.

For sale, and supplied by—
TURNER and Co., 57 and 59 Ludgate Hill, London.
B. A. M. FROISETH, Salt Lake City, Utah, U.S.

Now ready, price 3s., by post 3s. 3d., Sixth Edition; Twentieth Thousand Copy, much improved, and enlarged to nearly 300 pages.

HOPTON'S CONVERSATIONS ON MINES, between Father and Son. The additions to the work are near 80 pages of useful information, principally questions and answers, with a view to assist applicants intending to pass an examination as mine managers, together with tables, rules of measurement, and other information on the moving and propelling power of ventilation, a subject which has caused so much controversy.

The following few testimonials, out of hundreds in Mr. Hopton's possession, speak to the value of the work:—

"The book cannot fail to be well received by all connected with collieries."
Mining Journal.

"The contents are really valuable to the miners of this country"—Miners' Conference.

"Such a work, well understood by miners, would do more to prevent colliery accidents than an army of inspectors."—Colliery Guardian.

London: MINING JOURNAL Office, 26 Fleet-street, E.C., and to be had of all booksellers.

THE "CHAMPION" ROCK BORER

MINES AND QUARRY STANDS, STEEL DRILLS, SPECIALLY PREPARED INDIAN RUBBER HOSE, TESTED IRON PIPES, &c.

Air-Compressing Machinery,

Simple, strong, and giving most excellent results, and

ELECTRIC BLASTING APPARATUS.

Full particulars of rapid and economical work effected by this machinery, on application.

R. H. HARRIS, late

Mechanical and Consulting Engineers,

ULLATHORNE & CO., 63, QUEEN VICTORIA STREET, LONDON, E.C.



J. WOOD ASTON AND CO., STOURBRIDGE

(WORKS AND OFFICES ADJOINING ORADLEY STATION),

Manufacturers of

CRANE, INCLINE, AND PIT CHAINS,

Also CHAIN CABLES, ANCHORS, and RIGGING CHAINS, IRON and STEEL SHOVELS, SPADES,

FORKS, ANVILS, VICES, SCYTHES, HAY and CHAFF KNIVES, PICKS, HAMMERS, NAILS,

RAILWAY and MINING TOOLS, FRYING PANS, BOWLS, LADLES, &c., &c.

Crab Winches, Pulley and Snatch Blocks, Screw and Lifting Jacks, Ship Knees, Forgings, and Use Iron of all descriptions

WELDED STEEL CHAINS { FOR CRANES, INCLINES, MINES, &c.,
MADE ALL SIZES.